Project Number RP-FOWA

THE FUTURE OF THE WORCESTER MEMORIAL AUDITORIUM

An Interactive Qualifying Project Report
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by

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Abstract:

The Worcester Memorial Auditorium, built after a long political struggle as a war memorial for the use and benefit of the people, has recently fallen into disuse. This Interactive Qualifying Project investigates the circumstances surrounding the planning, useful life, and decline of the Auditorium through an examination of available historical records. The original functional intention of the Auditorium, the actual resulting use during its successful lifetime, and the reasons surrounding its decline are analyzed herein. Additionally, the national and regional economic forces influencing the City of Worcester, and specifically the life of the Auditorium, are examined through statistical records and historical texts. With this information it is possible to conduct an unbiased critical analysis of any proposal for future use of the Auditorium.

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1 Introduction

This project investigates the different roles that the Worcester Memorial Auditorium has played in Worcester since its dedication in 1933. The intention of its constructors was to build a bold war memorial that could serve as a public meeting place as well as a performance hall. It filled a social need for entertainment at the time and was a success for 50 years. Everything from basketball to ballet, rock concerts, and drama productions were hosted in the Auditorium. It was also home to conventions, religious services, and essentially any other major events held in the city. This lasted into the 1960s, when a number of issues, as well as competition with Mechanics Hall and the Centrum, led to a decline in the Auditorium's significance.

Decreasing municipal tax revenues led to budget cuts. This, in combination with the facility's waning popularity, led to large annual operating deficits during the 1980s. A series of renovation projects and aggressive private management throughout the 1990s were unable to solve the situation. After being reduced to temporarily housing the state Juvenile Court from 1999-2003 the Auditorium closed its doors. What to do with this unique facility remains an issue for all Lincoln Square development projects. An accurate analysis of the economic and social circumstances surrounding the planning, use, and decline of the structure will provide a basis for evaluation of future plans.

2 Methodology

During this project the main tasks and subtasks identified to achieve the objectives were to develop a critical and detail oriented research, which will not only focus on the Worcester Memorial Auditorium, but would address other cities Auditorium's across North America as well. Through this research a series of newspapers articles, journals, as well as following a series of interviews with individuals who at some point managed the auditorium while was still being use.

The time frame needed in order to accomplish identified tasks and subtasks is as follows. The length of this project would be three terms, B, C, and D term. B term was used to identify the challenges of the project, to find a proper definition for the Auditorium based upon its origins. At the same time while conducting this research it would be possible to identify the historical context of the building and the City of Worcester during the 1900s and the demand for such a large building. The analysis covers the issues concerning the Planning of the building from its inception to its final stage: the decay of the Auditorium.

Collecting information to identify the problem of the Auditorium was the most important tasks of this project. All the information collected was through libraries, Worcester Historical Museum, and the historical archives of the Worcester Research Bureau website. The use of information technology was an essential part of our research. Since some of the information from the library and museum could only be accessed in these places. Although a major part of this project was mostly based on reading, technological equipments such as copy machines, newspaper magnifiers and others gave us the opportunity to access very useful information that was almost impossible to see because of how old it was. Another important part of this research was critically thinking and analyzing all of the information gathered. Furthermore the help of the librarians gave the opportunity to learn a more professional way of doing research as well as

useful key words. The information needed was all category of history interconnected to Worcester Auditorium. Most of this information came from magazines (e.g. Worcester Magazine), books, as well as the local newspaper Worcester Telegram & Gazette. It was also important to understand the changes experienced within the City of Worcester during the construction, life (used) of the Auditorium that eventually forced the City to close the building. Most of the articles were taken out of the Worcester library and Worcester Historical Museum. In addition an examination of the similar problems that happened to other cities that had the similar economical base. Thus, we needed to look into history of other cities as well.

3 Origin of Auditoriums

The term “Auditorium” is a Latin word with partial Greek roots. It is a combination of the Greek word “Auditoria” and the Latin word “-Orium”. “Auditoria” means “a place to hear; or the part of the building occupied by audience” and “-Orium” is used as noun in the sense ‘place for or belonging to, thing used for, requisite’. Thus, the literal translation of the roots is “the place used for hearing” (Oxford Dictionaries, askoxford.com). Koilon was the auditorium part of the ancient Greek theatre. The theatre was composed of three major parts. They are the Orchestra, the Scene, and Koilon. The orchestra was mostly in circular shape. At first the audiences were seating around the orchestra and later on the Greeks built the Koilon. Because of the semi circular shape built around the orchestra, it was called “Koilon”. Also it is known as the place where poets and others read their compositions to their friends. Under the empire period, it was applied to a court of justice. In the time of Diocletian, the auditorium had the name of “secretarium”; and the two words were used equivalently in the constitution of Constantine (Smith 1878). The word “Auditorium” refers to one part of the theatre where people sit and watch the performance but in the United States, it is used to describe the entire structure.

4 Worcester Memorial Auditorium Structure

The Memorial Auditorium is located in the perimeter of Lincoln Square in Worcester, Massachusetts. Its main entrance is facing Salisbury Street as shown in Figure 1.

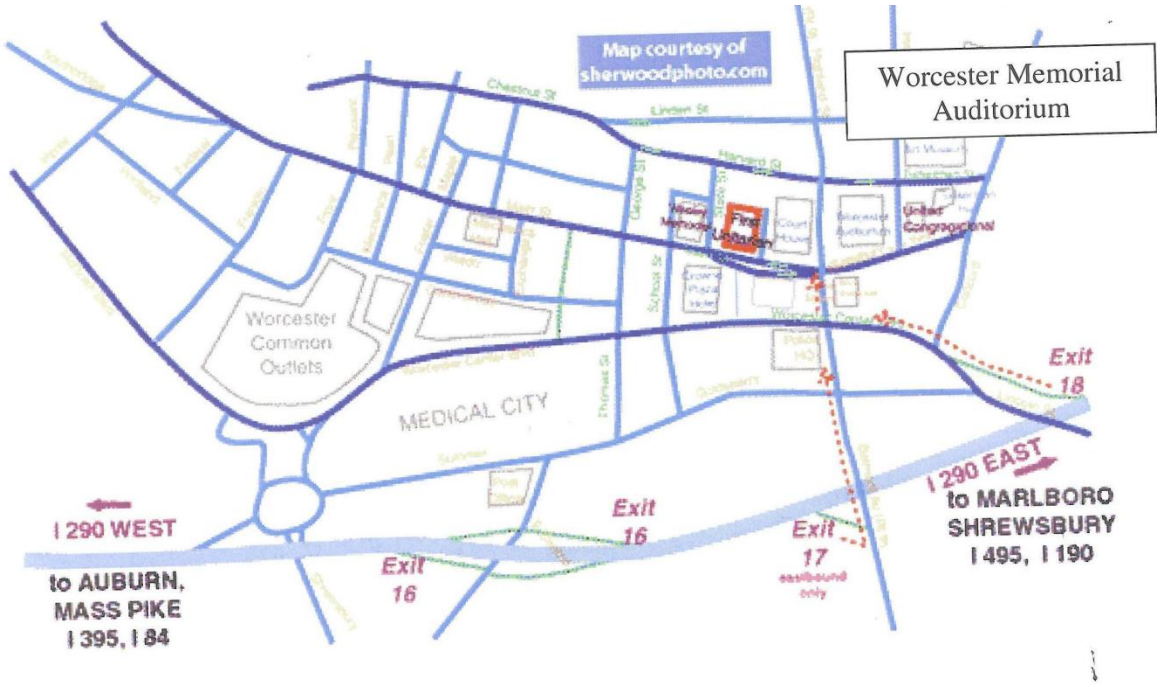


Figure 1: Lincoln Square layout

The front part of the building is composed of eight columns guarding a bronze window measuring thirty seven feet by thirty eight feet. Entering through the front doors gives us access to the main foyer, where there is a symbol of the city of Worcester on the floor as shown in Figure 2.

Figure 2: Symbol of the Worcester City on the first floor of the Auditorium

On both sides of the foyer are steps leading up to the second floor of the Memorial Hall. At the end of the foyer there are five pairs of doors that lead to the Auditorium. While walking up the right-most staircase, one could see a quote by Abraham Lincoln: "We here highly resolve that these dead shall not have died in vain - that this nation under god shall have a new birth of freedom" and a painting of the Navy forces mid-battle.

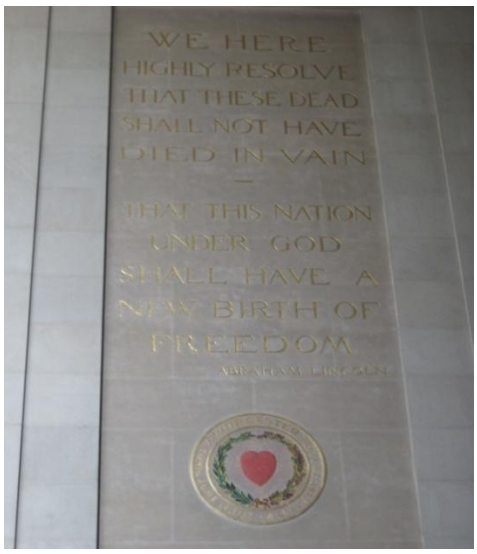


Figure 3: Abraham Lincoln's quote

Figure 4: Navy forces mid-battle

To the left-most staircase, there is also a quote by George Washington “The preservation of the sacred fire of liberty… entrusted to the hands of American people” and a picture of the battle field. On the second floor, there is a thirty foot mural painted by Leon Kroll on the wall above the doors that open up to the balcony of the Auditorium. This mural was drawn from 1938 to 1941. It represents actual people that died in World War I.

Figure 5: Battle Field

Figure 6: George Washington’s Quote

Figure 7: Mural on the wall on the second floor of the Auditorium

The Worcester Memorial Auditorium was opened in 1933 as a theatre and closed in the 1980's. It was unused for years until the City of Worcester sought to expand its court system in 2002. The 50,999 square foot basement of the building was used by Juvenile and Family probate courts until 2003. The new Worcester Trial Courthouse located on 225 Main Street was recently opened. This new facility was designed to accommodate all five city courts into one building. Therefore the Auditorium is once again left unoccupied and has become a rundown place.

The main level of the building is the first floor which includes the main stage that measures about 5,075 square feet and is surrounded by many small rooms, that were used to be coatrooms, concession stands, rehearsal rooms, bathrooms, office, and storage rooms. The main auditorium is about 18,676 square feet. Because the Auditorium now is unoccupied, the space in front of the stage is currently used to store Boston Court data as shown in Figure 8. The remaining space on the first floor provides an area of approximately 23,374 square feet. This number included the

second stage and seating area, known as the Little Theater which is located behind the main stage. In total, this first floor is approximately 47,126 square feet.

Figure 8: Auditorium – The stage, Proscenium, Kimball Organ

On the main stage there is what used to be one of the finest organs, a Kimball Organ. It is considered to be a very important piece of the Auditorium, because this particular pipe organ used to be the fifth largest one in the United States.

Figure 9: The Kimball Organ

Figure 10: Little Theater

The second floor of the building contains the Memorial Hall and the balcony of the Auditorium. The balcony along the outside of the Auditorium is looming over the stage and first floor. Figures 11, 12, 13, and 14 are floor plan, section views, and Highland Street elevation of the Auditorium.

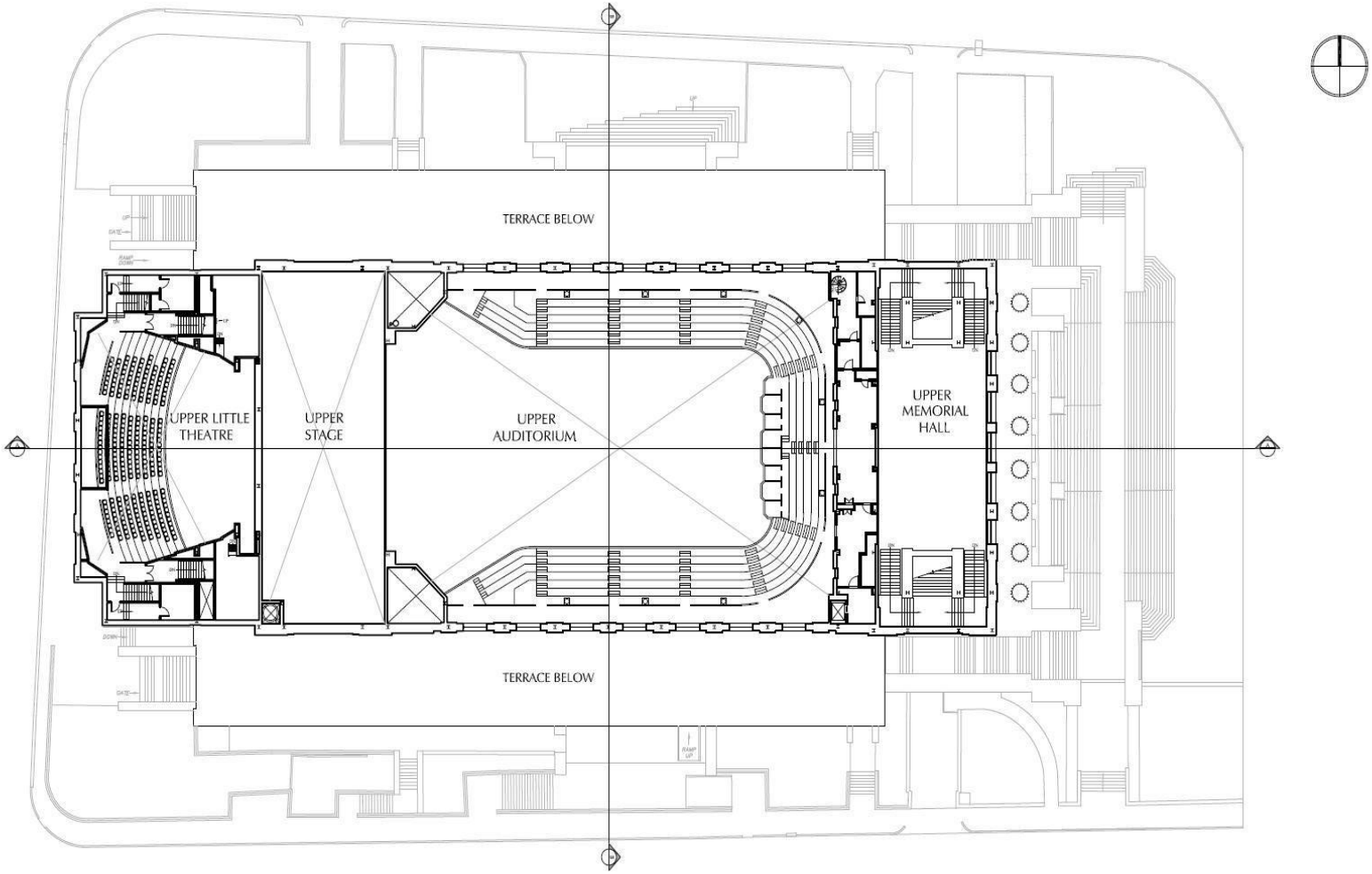


Figure 11: Auditorium Projection Booth Floor Plan

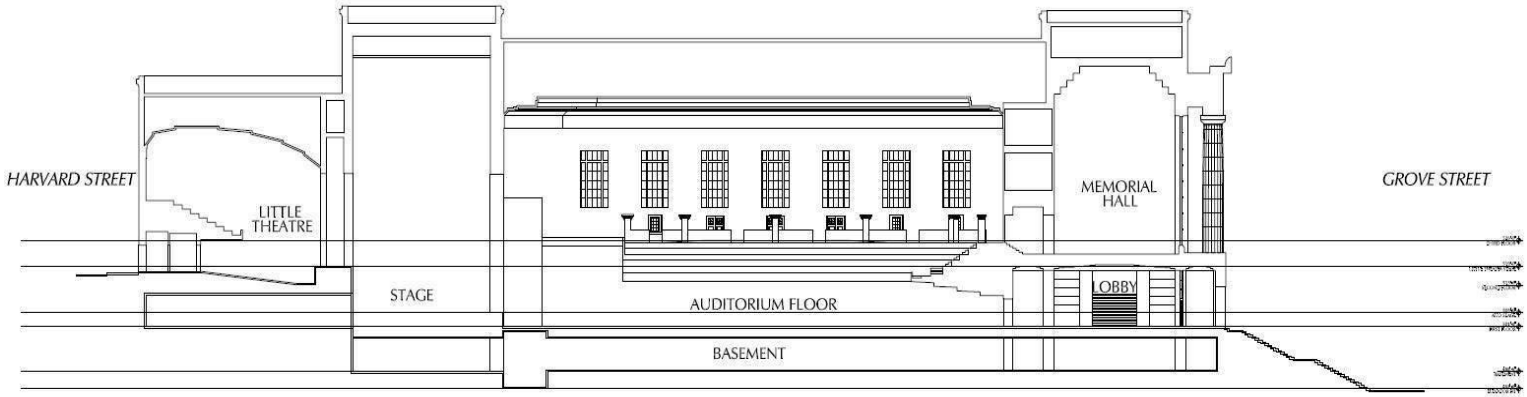
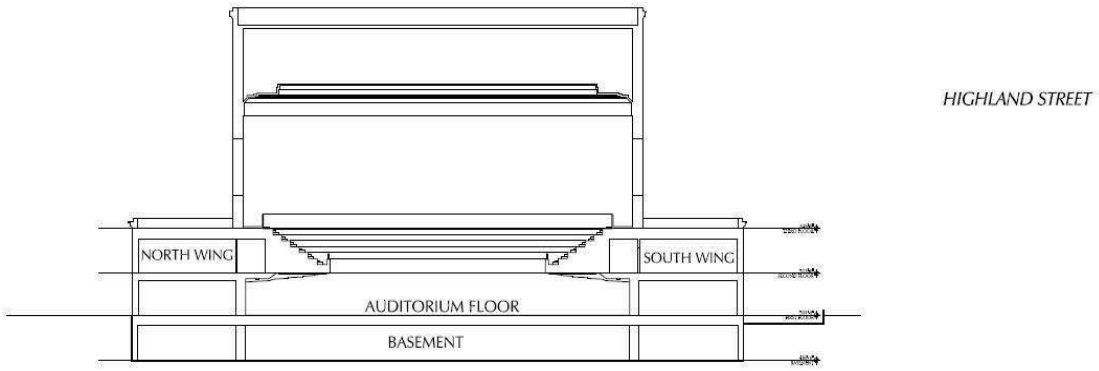


Figure 12: Auditorium Section View A



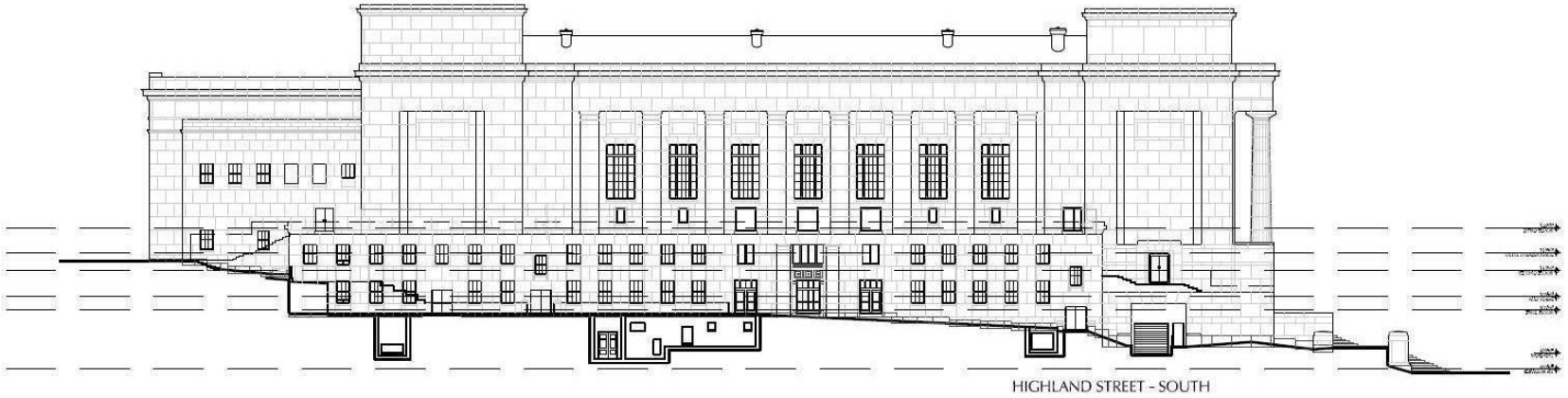
EXISTING CONDITIONS - SECTION B 1" = 30'

LAMOUREUX PAGANO ASSOCIATES.ARCHITECTS

Worcester Memorial Auditorium Adaptive Re-Use Report

1 LINCOLN SQUARE WORCESTER, MASSACHUSETTS

Figure 13: Auditorium Section View B



EXISTING CONDITIONS - HIGHLAND STREET ELEVATION 1" = 30'

LAMOUREUX· PAGANO
ASSOCIATES, ARCHITECTS

Worcester Memorial Auditorium Adaptive Re-Use Report
1 LINCOLN SQUARE WORCESTER, MASSACHUSETTS

Figure 14: Auditorium Highland Street Elevation

5 History of the Auditorium

5.1 Planning for the Auditorium

In 1917 The Municipal Auditorium Commission was formed, and on December 16, 1918 its first report was submitted to the City Council (The Evening Gazette 1933). With the hope of further considerations by the City Council, the report addressed the feasibility of erecting and maintaining a Municipal Auditorium building in the City of Worcester. Through this report the City Council also made recommendations for the construction of such a building, at the same time they mentioned what they thought would be a suitable site. The method for procuring the money to pay the cost and maintenance of the building was not yet clear (The Evening Gazette 1933).

After careful consideration all of available sites, the commission came to the conclusion that money was not the number one issue on which they would base their decision. The commission unanimously recommended the East End of the Common as the most suitable site for the Memorial building.

The renovations of several streets were recommended so the Memorial building and its architectural beauty could be fully appreciated from all sides (The Evening Gazette 1933). The commission felt that the selected location would not only meet the architectural requirements for the building, but would also be in a convenient location for the citizens of Worcester. In this report the commission noted that large crowds would be able to enter and exit the facility with a minimum of inconvenience.

During the debate choosing the location of the Auditorium, the United States of America entered World War One and the issue was put on hold. After the war, another four-year delay occurred when a new debate emerged; as to whether a new public library should be combined with the auditorium (The Evening Gazette 1933). It was the idea of making the building a War

Memorial to honor Worcester's heroes that helped the project to gain broad public support. However, in 1919 the Commission was still debating over where to put the building, and in an attempt to end this long debate the council put forth legislation which would place the Auditorium on the Worcester Common site. The bill, however, did not pass because of protest against the use of the land (The Evening Gazette 1933).

No further action was taken until March 1925, and since the auditorium Commission seemed to be convinced that Salem Square was the appropriate site for the Auditorium, city council decided to approve it. In January 1926 the Auditorium Commission reported an estimated cost of $1.8 million dollars for the land and another $1.5 million for the auditorium, and recommended borrowing $3.5 million dollars (The Evening Gazette 1933).

Through most of the 1920s, the city government dithered, using the lack of site as an excuse. A proposal to locate it east of the common and perhaps combining it with a new library proved to be too expensive (The Evening Gazette 1925). Frustrated with the delay, a group of wealthy businessmen, Worcester's elite mechanical entrepreneurs, took it upon themselves to purchase the Lincoln Square site from the Worcester Art Museum and donate it to the City as the home of the Auditorium. The council accepted the offer and set in motion the machinery for borrowing $2 million dollars for a building to seat approximately 4,000 people. Finally, in January 1930, more than 12 years after the first proposal, the commission was revived under the leadership of Mayor Michael J. O'Hara, resulting in the actual construction of the building. It was finished in 1932 and dedicated September 26, 1933.

Not all of the citizenry was convinced that Worcester could afford such an extravagant building. An important proposal came out on March 1930 which urged that Worcester should not jump into the Auditorium without looking at the current financial standing of the city compared to the predicted future economic growth. In this document the burden of public debt was

presented as a serious problem in the city, state and nation, which would make the Auditorium a poor asset for the city of Worcester (The Evening Gazette, 1930). Such opinions can now be seen as if this document has predicted the future, and all of the economic problems associated with the Memorial Auditorium.

The project cost was calculated to be 3.5 million dollars expecting that the City was going to pay the $1.8M for the property. However the owners of the property estimated the land's value to be over three quarters of a million dollars higher. Such a discrepancy created more problems within the budget that has been already established (The Evening Gazette 1933). Even though the consideration of constructing the Worcester Auditorium had been examined multiple times, it was quite evident that Commission did not have the indispensable information in order to make a decision. Obtaining the most accurate financial information was essential I order to complete the construction of the building. Therefore, many of the people involved were against the construction of the building and recommended that before bending their backs to the load of the auditorium project, they wanted to see what it was actually going to cost the city annually, and whether the city could afford it at the time. In fact many members of the Auditorium commission began to oppose it because they thought, and were convinced, that there was not enough public demand for an auditorium. They were sure that the city could have used such a large sum of money for a better development project which would benefit the city's economy in the years to come.

5.2 The Life of the Auditorium

There were many major successful events which occurred during the period 1950-1980 at the Auditorium. In 1954, Worcester Music Festival was held at the Worcester Auditorium. In the night of opening, the Auditorium was full, with 3400 people attending. They were there to listen to the music played by Philadelphia Orchestra and the festival Chorus of 300 Worcester Country

mixes. The festival was successful with a lot of positive reviews. That proved that the auditorium was an important building for Worcester (Worcester Music Festival 1955). There was another big event in 1958, the Auditorium Rededication, which was a three night festival with 3000 people. On opening night, the newly appointed Bishop Saltonstall pointed out the significance of the Auditorium and mentioned that it was "criminal madness" to forget two important things: "The Auditorium is a memorial to war deads" and "it is not always true that peace at any price is good." The second night was the festival of Nationalities. It occurred inside the building and featured the traditions of many cultures, in varied costumes worn by folk dancers. It was an interesting night with full of music and joy. The last night of the festival was the Honor Sport Champ. The basketball game between Baroni glass and Tadcaster Brewers attracted a lot of people. There was also baton twirling and a table tennis exhibition (Worcester Auditorium Rededication, 1959). Beside these two major events, there were a lot of concerts that were held in the Auditorium during this period. With these successful events, the auditorium was foreseen to be a more important focal point in civic activity. It was said that the purpose of the auditorium was not a commercial venture. "While efficient management is essential; the building is not intended to pay off in dollar and cents".

These successful events were not able to save the Worcester Memorial Auditorium from deficit. Worcester was struggling after the end of World War II through the second half of the 20th century. At the beginning of the 1900s automobile was popular and gradually became the principal mode of transportation. Because of that, more and more people began moving out of the city to the suburbs and the industry soon followed. One after one, the important industries of the Worcester moved away or ran out of business. For instance, majority of the big the big mills closed, as well as the railroad car factory which was owned by Pullman Standard. In addition, the railroad industry declined, and in 1958 leading to the demolition of the old Union Station.

Trolley was no longer used. There were several problems that the city had to face during that time: inadequate water resources, aging schools, and poor streets. Therefore, the city needed a lot of capital to start the process of urban renewal and the money for running and repairing the Auditorium would be limited. In April 1953 a tornado swept through the city, within an hour destroying more than $55 million worth of property and leaving 91 people dead and 1350 seriously injured. The task of recovery was more difficult than ever (Erkine 1981).

The Auditorium served many functions. To sport fans, it was a basketball court. To music lovers, it was a concert hall. To others, it was a convention hall. It held many events such as boat show, dance recitals, graduations, stage shows. Because it was not designed for these varied uses, renovations were often required. In 1960, it was pointed out that the line of sight to Auditorium stage and acoustic were significant problems with the building's appeal to professional musical organizations. The annual financial report in 1963 showed that the Auditorium spent $33,068 more than it made. This was seen as an acceptable annual operating deficit. A large civic facility of this nature was never expected to turn a profit, but rather to fill a societal need for a gathering and performance space. However, the Auditorium's financial problems looked to be getting worse. The number of events in 1963 showed a decrease of 15% from 1962 (Kirk 1964). In 1966, the Auditorium reported a deficit of $7,459.55 for the first four months of the year (Brehnan 1966). In the same year, some surveys were conducted; they showed that because of the poor sound system, many performers said they would not perform there. It would lead to the loss of money for the Worcester Memorial Auditorium. So the trustees decided to spend up to $150,000 on renovation, including the improvements in acoustics and lighting (The Worcester Telegram 1966).

In 1969 the chairman of the Auditorium trustees, Herbert B. Cohan, estimated the cost for changing the seating arrangement at $90,000, and it would reduce capacity by 300 to 600 seats in order to attract more customers and performers (The Evening Gazette 1969). By the time of 1973, the city realized that there was a need for a sports center which was recommended to be built at Washington Square. The sports center can be used for good sized conventions and trade shows. People also wanted to revive Mechanics Halls as a form of cultural center. If these two projects were constructed, there would be no need for the Auditorium to exist. Therefore, there was a proposal saying that the Auditorium can be a sport center and the cultural center. It would be less costly to make the Auditorium become a sport center and the cultural center than constructing a new building and reviving Mechanics Hall. So there was a question: "What would happen to the Worcester Memorial Auditorium?" Finally in 1977, the Mechanics Hall was resorted and drew 389 events in the next following year. The new civic center also was expected to open in 1980. There was a hope that the civic center and the Mechanics Halls might boost the Auditorium business in the long run but the proposal about converting the big hall into an annex for the Court house was also considered (The Worcester Telegram 1977).

In 1980, City manager McGrath stated that "he could not promise that any of Worcester's shares of the money would go for improvements at the Memorial Auditorium". He wanted to focus on completing the new Civic Center and the funds for the Auditorium would be in doubt. At this point the Auditorium was consistently showing a large annual deficit. If funding was cut, the gap between income and expenses would become larger (The Evening Gazette 1980). In addition, there were inflation and recession concerns from 1976 to 1980. The price of the goods was high and the dollar was losing value. People had to work hard in order to break even. When the Auditorium was built in 1932, there evidently was little consideration given to acoustics. Until 1979, the city spent invested large amounts of money on renovation which improved the

quality of sound, but the acoustics still were not suitable for many concerts. “In 1979, the association installed movable acoustic-ceiling and sound boards on the stage.” These changes improved the sound just a little and there still were problems with the echoes and lack of focused sound on the stage. In 1981, there was a proposal to build a new acoustic shell to help eliminate the scattering of the sound that cause difficulties for musicians.

It was the opinion of City Manager Francis J. McGrath that a municipal auditorium could not be expected to turn a profit. It acts instead as a catalyst for the local economy (Connolly 1983). It was his intention to revitalize the facility. He helped secure the funding for a 5 year $600,000 restoration of the Auditorium. This took place from 1984-1989 and included repairs to the aging roof, a restoration of Memorial Hall to its original colors, a new stage maintenance traveler, new acoustic curtains, replacement of the lift floor, replacement of the stage floor, replacement of 950 balcony chairs, and 1300 new main floor seats designed to solve sight-line problems (Duckett 1989). Unfortunately, the City of Worcester was dealing with an economic decline during this time and budget cuts reduced the annual operating budget for the Auditorium from $345,346 to $284,326 during the 87-88 fiscal years (Magiera1987).

5.3 Decline

An average annual operating deficit of $250,000 was reported during the 1980s. Clearly the people of Worcester were no longer utilizing the municipal auditorium to its full potential. In 1990 the City projected losses of $223,000 and decided it would be better to close the facility than to absorb such a deficit. It was at this time that Spectacor Management Group, a private firm that was managing the Worcester Centrum, stepped forward and expressed interest in running the Auditorium. The City Manager’s office was required to issue a Request for Proposals due to a recently passed state procurement law. Not surprisingly, Spectacor was the only company to return a proposal and was subsequently awarded a contract to run the

Auditorium for 1 year. Spectacor was to split any profits 50/50 with the city; the city's share was to be earmarked for Auditorium improvements. Spectacor was solely responsible for any operating deficit (Kotsopoulos, 1990). This is the first time the Memorial Auditorium's operations were privatized.

Despite Spectacor's aggressive booking and raised rental fees, the Auditorium was unable to post a profit. The firm was awarded a series of similar contracts from 1991 to 1998. In 1998 Spectacor negotiated a contract for 18 months which would reimburse them for almost $170,000 in losses over the past 8 years (Kotsopoulos 1998). At the end of this contract Spectacor and the city were unable to negotiate any further agreements. Differences in the Request for Proposal and Spectacor's proposal required that the city put out a modified RFP to facilitate any hope of future management by Spectacor. It was decided that Spectacor would end their association with the Auditorium (Kush 1998). City Manager Thomas R. Hoover suggested other uses for the Auditorium, such as a conversion to a public library, a performing arts center, or a courthouse.

In the same year the State finalized a lease for the Auditorium. It would pay $1.17 million a year to house its Juvenile Court offices in the basement and part of the first floor (Kostopoulos 1999). This arrangement was successful in a financial sense. However, it was the end of the Auditorium's intended social purpose. This was a disservice to the facility's intended function as a war memorial and municipal meeting and performance space.

The arrangement was only temporary. The Juvenile Court moved its offices into the new Courthouse on Main Street in 2003. The State planned to help find another use for the Auditorium (Astell 2003). No subsequent plans ever came to fruition. The Auditorium was closed and sealed after the State moved out. It remains so to this day.

6 Economic Factors Influencing the Life of the Auditorium

6.1 American Economic History

6.1.1 Pre World War I (1869-1919)

Similarly to other high developed countries, the United States economy is composed of seven sectors: Agriculture, construction, mining, manufacturing, services, transportation and trades, and government. The time period from 1860 to 1910 witnessed an agrarian revolution. The entire population of the United States in 1860 was 30 million. In 1910 there were 50 million living on the farms and the number of farms had grown from 2 million in 1860 to 6 million in 1910 (Faulkner 1957). Since the Civil War, this period was one of great agricultural expansion. The American farmer has not lacked aid from either the state or the federal government. In the first place, the fundamental importance of agriculture has always been recognized. As late as 1880, 49 percent of the gainfully employed population was engaged in agriculture, 18 percent in manufacturing, about 10 percent in services, and the rest was in construction, mining, transportation, trades, and government. Agriculture still remained the foundation of much of United States' economic. Also during this period, agricultural machinery was introduced. It aided agriculture production and drove the prices of food and goods down to a point that in many cases was below the cost of production. Overall, with rising prices for products and land from 1899 to 1920, better roads, electric trolleys, automobiles, and farm machinery, farmers' economic conditions improved and rural life became more satisfying. However, these years also saw a constant increase in urban population and manufacturing, and a relative decline in agricultural population. Table 1 shows the percentage of the people engaged in agriculture and increasing in manufacturing during the period of 1869 to 1919. During this period, the percentage of people in agriculture decreased by 23.7% while in manufacture increased by 7.5%.

Gradually, the number of people engaged in manufacturing sector caught up with people in agriculture sector and continued to increase more.

Table 1: Persons Engaged in Production by Economic Sectors

Year or Period	1869	1879	1889	1899	1909	1919
Agriculture (%)	48.3	48.9	41.6	36.9	30.4	24.6
Mining (%)	1.3	1.8	2.3	2.5	3.1	2.7
Construction (%)	4.9	4.1	4.5	4.9	5	3.6
Manufacturing (%)	17.6	18	18.7	20	22.1	25.1
Transportation, communication, public utilities (%)	5.1	5.2	7.1	7.7	8.8	9.4
Trade (%)	7.8	7.9	9.7	10.8	11.8	13.2
Finance, Insurance, and real estate (%)	0.4	0.4	0.8	1.2	1.6	2.1
Services (%)	11.1	9.9	11.5	11.9	12.5	10.7
Government (%)	3.5	3.9	3.8	4.1	4.8	8.6
Total (in Thousands)	11,910	15,639	21,620	26,861	34,785	42,313

Source: Historical Statistics of the United States Colonial Times to 1970, Series F250-261 – "National Income and Persons Engaged in Production, by Industry Divisions: 1969-1970"

If the war of 1812 between the United States and England introduced the factory, the Civil War brought the Industrial Revolution to the United States. Until the decade of the 1880, agriculture was the principal source of wealth, but the census of 1890 showed that manufacturing had forged to the front, and ten years later the value of manufactured products, such as steel and iron, was more than double than that of agriculture. As table 2 shows, the value of manufactured products in 1889 was more than 9 billion dollars while the value of agricultural was approximately 2.5 billion dollars. But in 1909, the given value of manufactured products rose over 20 billion dollars.

Table 2: Comparison of the Value of Agricultural and Manufactured Products (Thousands)

Value of Products	1889	1899	1909	1919
Agricultural	2.46	4.71	8.49	23.78
Manufactured (Including those based on Agriculture)	9.37	11.40	20.67	62.41

Source: American economic history, page 392

It would be seen, the value of manufactured products jumped up to over 60 billion dollars in 1919. The increase was due to the advance of iron and steel manufactory, foundry and machine shops. The products of the industry standing twenty fifth in rank in 1914 had a higher value than those of the industry ranking first in 1860.

The United States became a great manufacturing nation; first of all because of its unsurpassed natural resources. Moreover, iron, coal, oil, copper, and other minerals had been obtainable in large quantities. In addition to raw materials, manufacturing was dependent on labor and market. Without mining industry and transportation facilities, manufacturing, would be impossible. The 26,000 miles of navigable rivers, and Great Lakes, the roads, and the canals helped in the early years of the introduction of the factory system, but it was not until the construction of a network of railways that large scale manufacturing became feasible (Faulkner 1957).

The United States ranked fifth in the world in the value of manufactured products in 1840, fourth in 1860, and had taken the first place in 1894. This period also witnessed the westward movement and relocation of the manufacturing. The center of manufacturing in 1850, which was shown in the Twelfth Census, was near the center of Pennsylvania, forty one miles northwest of Harrisburg. In 1860, 1870, and 1880, it moved to western Pennsylvania and by 1890 nearly to the center of Ohio. Moreover, the next census showed the progress westward to a point southeast of Mansfield State. For example, the flour milling moved west from the coast rivers to Erie Canal, then to Chicago, and finally to Minneapolis and Kansas City. The meat packing industry also moved from Cincinnati to Chicago and Kansas City. Although the center of manufacturing moved westward, this tendency has been hampered as well as aided by the many advantages given to companies for them to locate in the west side of the country. The nearness to materials explains the concentration of milling in the Twin Cities and Kansas City. It

also explains the meat packaging in Chicago, Omaha, and Kansas City; fruit and vegetable canning in California, central New York, and Baltimore; fish canning in Oregon and on the New England Coast; and tobacco in North Carolina (Faulkner 1957). By 1913 the United States accounted for fully one third of the world's industrial production.

Table 3: United States Income by Industry Divisions

Year or Period	1869	1879	1899	1899-1903	1903-1907	1907-1910	1910-1913
Agriculture (%)	22.2	19.0	14.2	18.2	17.5	19.4	18.9
Mining (%)	1.5	2.1	2.2	2.9	3.5	3.4	3.5
Construction (%)	5.7	5	5.9	4.3	4.7	4.1	4.1
Manufacturing (%)	14.6	13.3	18.9	18.6	18.6	18.3	18.9
Transportation, communication, public utilities (%)	10.9	12.9	11.2	10.3	10.8	10.9	11.1
Trade (%)	15.2	16.1	16.8	16.6	17	16.4	15.8
Finance, Insurance, and real estate (%)	11.5	12	13.1	12.7	13.7	13.0	12.7
Services (%)	14.2	15.2	12.5	10.3	8.9	9.1	8.6
Government (%)	4.2	4.5	5.2	6.0	5.3	5.4	5.5
Total (in million dollars)	6,827	7,227	10,701	17,313	21,670	25,400	29,111

Source: Historical Statistics of the United States Colonial Times to 1970, Series F250-261 – "National Income and Persons Engaged in Production, by Industry Divisions: 1969-1970"

Table 3 shows the percentage of agriculture contribution to the United States income was the highest number with 22.2% while manufacturing was only 14.6%. Trade industry was 15.2% and services industry was 14.2%. However, from 1899, manufacturing was catching up with agriculture by moving 18.6% of national income. Manufacturing industry gradually replaced agriculture.

6.1.2 Between Wars (1919-1941)

At the end of World War One the American economy faced a transition back to peacetime production. The mass production technologies which were developed around the turn of the century had become standard practice during the war. "By the 1920s, the sheer material success of mass production made it almost irresistible as a paradigm." (Piore 46). These methods were applied to consumer goods when the demand for war products evaporated, making

technology affordable for the middle class. The 'Roaring Twenties' saw a large economic boom which was fostered by laissez faire economics. This same 'hands off' government approach to the economy was a factor in the stock market crash of 1929 and the Great Depression.

Table 4: Gross Domestic Product, Billions of Dollars

Gross Domestic Product, Billions of Dollars						
Year	Total GDP	Manufacturing			Services	Other
		Total	Durable	Nondurable		
1929	**104**	45.3%	*8.9%*	*36.4%*	29.4%	25.4%
1933	**56**	45.7%	*6.2%*	*39.5%*	35.8%	18.6%
1937	**92**	45.8%	*7.5%*	*38.3%*	26.9%	27.3%
1941	**127**	41.5%	*7.7%*	*33.9%*	22.5%	36.0%

Source: Bureau of Economic Analysis, Table 1.1.10 - "Percentage Shares of GDP"

In Table 4 it can be seen that the economy was quick to recover from the Depression. This was largely due to broad government initiatives launched by President Roosevelt to deal with the crisis, known collectively as the 'New Deal.' (Conte 3). The GDP breakdown by industry shows a fairly stable manufacturing sector for both durable and nondurable goods. The services sector peaked during the Depression, as a direct result of Roosevelt's New Deal programs, but declined to 22.5% of GDP by 1941.

Table 5: National Employment by Sector, Thousands of Workers

National Employment by Sector, Thousands of Workers				
Year	**1929**	**1933**	**1937**	**1941**
Total	**37,699**	**30,940**	**39,701**	**45,785**
Agriculture	9.4%	9.7%	7.8%	6.1%
Mining	2.6%	2.2%	2.4%	2.1%
Contract construction	2.0%	4.9%	4.9%	4.3%
Manufacturing	27.7%	23.3%	26.7%	28.7%
Durable goods	*13.9%*	*9.4%*	*12.9%*	*15.3%*
Nondurable goods	*13.8%*	*13.9%*	*13.8%*	*13.4%*
Transportation and Trade	27.7%	25.1%	24.7%	24.2%
Transportation and public utilities	*10.6%*	*8.7%*	*7.9%*	*7.2%*
Wholesale trade	*4.7%*	*4.5%*	*4.5%*	*4.4%*
Retail trade and automobile services	*12.4%*	*12.0%*	*12.4%*	*12.6%*
Services	19.1%	18.4%	17.6%	16.3%
Finance, insurance, and real estate	*4.0%*	*4.2%*	*3.6%*	*3.4%*
Other Services	*15.1%*	*14.1%*	*13.9%*	*12.9%*
Government	9.6%	19.1%	18.1%	18.7%

Source: Bureau of Labor Statistics, Table 6.4A – "Full- and Part-time Employees by Industry"

Table 5 shows employment data for the same period. The manufacturing industry faced a dip in employment during the Great Depression, but it recovered its stake in the national labor force by 1941. Conversely, employment by the services sector steadily declined during this period. This, in conjunction with Table 1, shows that manufacturing was the dominant economic sector during this period.

6.1.3 United States Economy after World War II (1945-1960)

At the end of World War II (WWII) many Americans expected the United States economy to experience a recession similar to that of the great depression. However, rising consumer demand contributed to an amazingly strong economic growth during the post war period, even when military spending was put on hold. Industries like aviation and electronics grew by leaps and bounds, and the automobile industry continued to grow. During this period affordable mortgages for returning military members facilitated a housing boom. As shown in Table 3, The United States Gross National Product (GNP) increased from about $200 billion in 1945 to $400 billion in 1955, and then to more than $700 billion in 1965. As the number of middle class Americans increased consumerism flourished, fueling the expansion of the economy (Conte & Carr 2001).

As the iron curtain fell across Europe and the United States found itself engaged in a cold war with the Soviet Union, the government continued to fund substantial military programs, as well as investing in technologically weapons like the hydrogen bomb. Economic help flowed to war-ravaged European countries under the Marshall Plan, which enhanced the market for numerous U.S goods. Furthermore, the government itself recognized its central role in economic affairs. The Employment Act of 1946 was a new government policy aimed at fostering employment, purchasing, and producing power. The United States also acknowledged the need for restructured international monetary arrangements during the postwar period, leading to the

creation of the International Monetary Fund (IMF) and the World Bank. Both institutions were created to ensure an open, capitalist international economy for future generations.

At the same time, domestic businesses entered a period which was marked by consolidation; mergers and acquisitions became common during this time. The American workforce employment breakdown by sector changed dramatically during the 1950s and 60s, with the services sector employing an increasing percentage of the work force. By 1956 the majority of the United States workers held white collar jobs. Along with these changes came the rise of labor unions which won long-term employment contracts and other benefits for their members.

As the demand for single-family homes and the ownership of cars increased many Americans migrated from central cities to suburbs. Enhanced by technological innovations like air conditioning, the migration spurred the development of the "sun belt" cities like Houston, Atlanta, Miami, and Phoenix in the southern part of the country and southwestern states. New and easy access to the suburbs was created by the newly constructed interstates; business patterns started to change as well. For example, shopping centers multiplied, going from eight at the end of WWII to 3,840 in 1960 (Conte and Carr 2001). Many industries soon followed, leaving big cities for less crowded sites.

Often times the 1950s are described as the time of complacency in the United States. In reality the 1960s and 1970s were times with big changes. As new nations emerged around the world, insurgent movements sought the overthrow existing governments, established countries grew to become economic powerhouses that rivaled the United States, and many economic relationships appear to predominate in a world which increasingly acknowledged that military action could not be the only means of growth and expansion. During the 1960s President Kennedy was asking Americans to meet the challenges of "new frontiers." As president, he was

looking to accelerate the economy growth rate by rising government spending and cutting taxes, he also pressed for social programs including medical help for elderly, help for inner cities, as well as increasing funds for education. A majority of these proposals were not enacted; however Kennedy's ideas furthered the shift of the American economy from a manufacturing to a service base (Conte and Carr 2001).

Table 6: Gross Domestic Product, Billions of Dollars

Gross Domestic Product, Billions of Dollars						
		Manufacturing				
Year	Total GDP	Total	Durable	Nondurable	Services	Other
1945	**223**	35.8	*3.6*	*32.2*	18.0	46.2
1955	**415**	39.5	*9.4*	*30.1*	23.0	37.5
1965	**719**	35.4	*8.8*	*26.6*	26.3	38.3
1975	**1,638**	33.8	*8.1*	*25.7*	29.3	36.9
1985	**4,220**	30.6	*8.6*	*22.0*	33.8	35.6
1995	**7,398**	28.4	*8.3*	*20.1*	38.9	32.7
2000	**9,817**	28.6	*8.8*	*19.8*	40.0	31.4

Source: Bureau of Economic Analysis, Table 1.1.10 - "Percentage Shares of GDP"

The dramatic expansion of American economy after World War 2 can be seen in Table 6. Additionally, it can be seen that the factors outlined before above caused the service sector to experience immense growth during this period; while the manufacturing industries, which had been the base of the economy for decades, declined in significance. In 1945 manufacturing contributed to GDP twice as much as the service sector. By 1975 both sectors had a nearly equal stake in GDP, as a result of an 11% growth in the service sector coupled with a 2% decline in manufacturing. This indicates the beginning of the end of manufacturing's economic dominance. Over the next 30 years the service sector continued to grow, and by 2000 it accounted for 40% of GDP. It is important to note that manufacturing still accounted for nearly 30% of the GDP, down from 36% in 1945. A 22% increase in the service sector's GDP contribution, in comparison to a 7% decline in manufacturing, clearly illustrates America's shift from manufacturing to a service

based economy in the past 60 years. However, an analysis of GDP breakdown alone does not fully illustrate the extent of the decline of the manufacturing industry (*Bureau of Economic Analysis)*.

Table 7: National Percentage of Employment by Sector, Thousands of Workers

National Percentage of Employment by Sector, Thousands of Workers							
Year	**1945**	**1955**	**1965**	**1975**	**1985**	**1995**	**2000**
Total	**55,548**	**59,080**	**69,692**	**85,044**	**105,802**	**124,306**	**138,678**
Agriculture	4.1	3.8	2.5	2.0	1.6	1.6	1.7
Mining	1.5	1.4	0.9	0.9	0.9	0.5	0.4
Contract construction	2.0	4.9	4.9	4.3	4.6	4.3	5.0
Manufacturing	27.3	28.7	26.0	21.6	18.3	15.0	13.4
Durable goods	*16.1*	*16.3*	*15.0*	*12.6*	*10.9*	*8.6*	*8.1*
Nondurable goods	*27.3*	*12.4*	*11.0*	*9.0*	*7.4*	*6.3*	*5.3*
Transportation and Trade	20.8	24.8	24.4	25.9	27.4	27.6	27.5
Transportation and public utilities	*7.1*	*7.1*	*5.8*	*5.4*	*5.0*	*5.0*	*5.1*
Wholesale trade	*3.5*	*5.0*	*5.0*	*5.3*	*5.5*	*5.2*	*5.1*
Retail trade and automobile services	*10.3*	*12.8*	*13.6*	*15.3*	*16.9*	*17.5*	*17.2*
Services	13.0	19.2	22.3	25.5	29.8	34.5	36.2
Communication	-	*1.4*	*1.3*	*1.4*	*1.3*	*1.1*	*1.2*
Finance, insurance, and real estate	*2.7*	*3.9*	*4.4*	*5.1*	*5.8*	*5.4*	*4.8*
Other Services	*10.3*	*13.9*	*16.7*	*19.1*	*22.8*	*28.1*	*30.2*
Government	31.4	18.9	20.3	21.2	18.7	17.8	16.7

Source: Bureau of Labor Statistics, Table 6.4A – "Full- and Part-time Employees by Industry"

Table 7 indicates a similar trend in service sector employment statistics over the same time period. Services accounted for only 13% of American labor force employment in 1945, less than half than that of manufacturing. Over the next twenty years this indicator nearly doubled, while that of the manufacturing sector remained fairly stable. By 1965, manufacturing and services employed nearly the same amount of workforce. It is at this time that the gradual decline in the importance of manufacturing in the economy began to take hold. New production technologies, most obviously robotic automation, greatly reduced the number of man-hours required to produce a given product. As such, the 7% decline in manufacturing's GDP contribution over this time period pales in comparison to the 14% decline in its share of national

employment. By comparison, the service sector experienced a 22% growth in its share of GDP and a 24% growth in its share of national employment *(Bureau of Labor Statistics)*.

The 1960-1970s

Often times the 1950s are described as the time of complacency in the United States. However, in contrast, the 1960s and 1970s were times with big changes. As new nations emerged around the world, insurgent movements sought the overthrow existing governments , established countries grew to become economic powerhouses to rivaled the United States, and many economic relationships appear to predominate in a world that increasingly acknowledge military might could not be the only means of growth and expansion. During the 1960s President Kennedy was asking Americans to meet the challenges of "new frontiers." As a president, he was looking to accelerate the economy growth rate by rising government spending and cutting taxes. He also pressed for medical help for elderly, relief for inner cities, as well as increasing funds for education. The majority of these proposals were not enacted. Kennedy's vision of sending Americans throughout the world to facilitate the development of helped the creation of the Peace Corps. Another step taken by Kennedy during this period was the exploration of American space (Conte & Carr 2001).

Kennedy's assassination in 1963 prompted for the congress to enact much of his legislative agenda. His successor, Lyndon Baines Johnson (1963-1969), planned to build a "great society" by distributing the benefits of America's successful economy to more citizens. The establishment of new programs such as Medicare (health care for elderly), food stamps (food assistance for poor people) and numerous education initiatives (assistance to students as well as grants to schools and colleges) led Federal spending to increase dramatically.

As the American presence in Vietnam grew, military spending also increased. A small military action which had started under Kennedy had mushroomed into a massive military initiative during Johnson's presidency. However, short term prosperity was created by spending on both the Vietnam and poverty war. Inflation was rapidly accelerated as the government failed to raise taxes to pay for these efforts by the end of the 1960s, which contributed with the decay of this prosperity. Energy prices were rapidly pushed higher and shortages were created during the 1973-1974 oil embargo by members of the Organization of Petroleum Exporting Countries (OPEC), and even after the embargo energy prices stayed high, adding up to inflation and ultimately leading to rising rates of unemployment. These factors contributed to the growing deficit at the federal budget, the intensification of foreign competition, as well as the decline of the stock market values.

The Vietnam War continued until President Richard Nixon. A group of Americans were held hostage at the United States embassy in Teheran and held for more than a year. The United States seemed not capable of controlling events, including economic affairs. America's trade shortfall swelled as low-priced and high quality imports of everything from cars to steel semiconductors swamped into the United States.

The economic conditions of continuing inflation, stagnant business activity contributed to the use of the term "stagflation." Price increases seemed to feed on themselves. Americans expected prices of goods and services to continue increasing, therefore, they bought more. As the demand for goods increased prices were pushed up as well, contributing to demands for higher wages. The government began to put together some payments, such as those for Social Security, to the Consumer Price Index, the best known measure of inflation as labor contracts started to increasingly include cost of living. As these practices helped employees and retirees deal with inflation, at the same time they perpetuated price increases. The government's ever-rising call for

money swelled the funds scarcity and led to bigger government borrowing, which in turn increased interest rates and increased costs for businesses and consumers even further. With energy costs and interest rates high, business investment languished and unemployment rose to uncomfortable levels (Conte & Carr 2001).

In the attempt to fight the bad economic situation and low rate of employment, President Jimmy Carter increased government spending, and created voluntary wage and price guidelines to control inflation. However these anxious attempts were unsuccessful. A less dramatic approach that could have worked more successfully against inflation involved the "deregulation" of a number of industries such as, airlines, trucking, and railroads. For years these industries had been under tight government regulation, with controlling rates and fares. The Federal Reserve Board, which clamped down money supply in early 1979, was the most important element in the war against inflation. By refusing to provide all the money the inflation-ravaged economy wanted, the Federal Government caused interest rates to rise. Therefore, consumer spending and borrowing rates slowed abruptly, pushing the economy to fall into a recession.

The Ninety Eighties

As the United States went through a deep economic recession throughout 1982, business bankruptcies rose 50 per cent over the previous year. At the same time agricultural exports declined, crop prices fell, and interest rates increased, which created difficulties for farmers. The economic disruption of the 1970s had important political consequences. Americans expressed their dissatisfaction with Federal policies by electing former Hollywood actor and California Governor Ronald Reagan (1981-1989). Tax reduction so people could keep more of the money they earned was the base of Reagan's economic plan. His theory held that lower tax rates would bring people to work harder and longer; therefore, this would lead to more saving and investment, which would contribute stimulating the overall economic growth. Although

Reagan's tax cuts and economic plan argue that its benefits would extend to lower-income people because higher investment would lead new job opportunities and higher wages, instead this one only benefited wealthier Americans (Conte & Carr 2001).

A combination of tax cuts and higher military spending, help creating reductions on domestic spending. Once again the budget deficit rose way beyond the levels it did during the recession of the early 1980s. The United States federal budget deficit went from $0.74 billion in 1980 to $2.21 billion in 1986. Although the budget deficit fell back to $1.5 billion in 1987, no longer after started growing again. The heavy spending and borrowing from the government concerned many economists, who were worried that inflation that inflation could be ignite by these government actions. However, the Federal Reserve continued cautiously calculating price increases; opting to quickly raise interest rates any time such uncontrolled spending presented a threat. The Federal Reserve retained the vital position of economic traffic cop, contributing to eclipse Congress and the President in guiding the nation's economy (Conte & Carr 2001).

Although recovery started building up some steam in the early 1980s, problems continued. Especially for farmers who worked on small family farms, the challenges of making a living was more stable in 1986-1988, when the United States was hit by serious droughts and just a few years later suffered extensive flooding. Many banks, loans and saving associations faltered as they went from a blend of inflexible money, thoughtless lending actions and a spree of unwise lending after they were partly deregulated. Such situation forced the government to close banks and loans institutions and to pay off their depositors, at huge cost to taxpayers (Conte and Carr 2001).

During the 1980s, the United States were unable to get out of the economic malaise that gripped the country during the 1970s. Trade deficits were posted by the United States in seven of ten years of the 1970s. America seemed to be confronted by a fast growing economy in the Asia;

especially Japan with their plans focus on long term results and close coordination throughout corporations, banks, and government seemed to offer a different model for economic growth (Conte and Carr 2001).

At the same time "corporate raiders" acquired several companies with very low stocks and then revitalized them, either by selling off some of their operations or by dismantling them piece by piece. Many companies spent large amounts of money buying their own stock or paying up raiders. Some people argued that raiders were causing problems for good companies. Others understood that in fact raiders helped the economy as they took on poorly managed corporations and turned them profitable again, or by selling them off so that investors could take their profits and reinvest them in more productive companies (Conte and Carr 2001).

The Ninety Nineties and beyond

The United States started the 1990s on a more moderate note, cautious Democrat, Bill Clinton (1993-2000) who themes sounded just like as his predecessors. However, Clinton's failure to persuade the Congress to enact an ambitious proposal to expand health-insurance coverage, Clinton understood that the era for "big government" was over in America. Therefore, he pressed to strengthen market forces in some sectors, and worked with Congress to open local telephone service to competition. Furthermore Clinton joined Republicans in order to reduce welfare benefits. However, even though Clinton lowered the size of the government public employment, the government continued to play a major role in the nation's economy. Also the Federal Reserve System continued to control the overall pace of economic activity, with a vigilant eye for any signs of renewed inflation (Conte and Carr 2001).

As the 1990s progressed, the economy showed a progressively more healthy performance. Trade opportunities expanded greatly as the Soviet Union and the Eastern European communism fell in the late 1980s. At the same time technological breakthroughs

created a wide range of computer hardware and software industry and revolutionized the way in which many industries functioned. The economy increased rapidly, and earnings rose quickly at the corporate level. A combination of low inflation and low employment, strong profits contributed with record increased. Americans involved in the stock market acquired wealth as the Dow Jones Industrial Average, which had stood at 1,000 in late 1970s rose to the 11,000 mark in 1999 (Conte and Carr 2001).

During the 1990s the numbers of farmers continued declining and America's labor force changed markedly. At this time the situation had changed, a small number of workers had jobs in industries such as mills, textiles factories, and metal or steel processing, while a bigger part of the workforce had jobs in the service sector. Many of these jobs were ranging from store clerks to financial planners. America's manufacturing such as steel and shoes were no longer the mainstays of the economy, at this time computers and the software became the most demanded products (Conte and Carr 2001).

Although the American economy was peaking at a $2.9 billion in 1992, the federal budget continued to shrink as economic growth contributed to the increased of tax revenues. By 1998 the government posted the first surplus in 30 years however, a huge balance remained to be pay as promised to in the form of Social Security to the baby boomers. Impressed by the combination of the a rapid growth and the continuing low rates of inflation, economist debated whether the United States had a strong enough economy to sustain a faster growth rate that seemed possible based on 40 years of previous experience (Conte and Carr 2001).

6.2 Worcester County Economic Trends

During the nineteenth century Worcester was at the center of the social and economical changes that were rapidly sweeping through a developing northeast, the location of Worcester between two of the biggest cities in the area, Boston and Providence, led the city to experience great changes in the early years of the nineteenth century. The competition of these two cities for becoming the major coastal center in New England enhanced investment within the city of Worcester and converting it in to the major industrial center of New England. Such a competition led to better transportation from Boston and Providence, starting with the Worcester-Boston turnpike that opened in 1806, allowed travelers to reach Boston in seven hours. Providence answered by building the Blackstone Canal, which was completed in 1828 (Worcester Historical Museum 2008). In 1835 the Worcester-Boston railroad was opened and shortly thereafter the Worcester-Providence line was operational, officially making Worcester a crossroad between two major nautical ports. This situation created an environment that allowed merchants, artisans, craftsman, and businessmen to succeed, as well as making Worcester to flourish. Because Worcester was a diverse and innovative city that offered plenty of opportunities, many people started to settle in Worcester. As they settled, new ideas and technologies were created and adopted. They were quickly applied and spread throughout the country.

One of these new technologies is the art/science of architecture and engineering. During the late 1700s and the early 1800s there was an explosion of interest in the scientific field of civil engineering and architecture. This new interest and the increased of the immigrant population in Worcester led to new varieties and styles of Architecture coming together in one area.

Worcester was one of the fastest growing urban centers throughout New England. The diversity of Worcester residents was expanding as fast as the city, which led to a mix of cultures,

innovative ideas, and technologies. There are several factors that turned Worcester from a small community to a center of technology and innovation.

Worcester was ideally located between two of the biggest cities in New England, Providence and Boston, which turned Worcester into a hub of communication and transportation. There was a clear process of connecting the city to its wealthy neighbors. This started in 1783 with the first highway-line in New England, created by Captain Levi Pease of Shrewsbury which ran from Hartford, Connecticut to Boston through Worcester leading to many knew as the transportation competition for the city of Worcester. The next step was the opening of the Boston-Worcester turnpike opened in 1806 (Worcester Historical Museum 2008). In 1828 the Blackstone canal opened and drastically shortened the travel time from Providence to Worcester. This caused the merchants of Boston to lose money, because the people of Worcester were shipping to Providence instead of to Boston (Washburn 1917). Boston's answered was to create the Worcester-Boston railroad, which brought Worcester's business back to Boston. Not too long after the Worcester-Boston railroad was opened, Providence opened a Worcester-Providence railroad as well. These two new modes of transportation, allowing all different kinds of goods and people to come into the City, stimulated local commerce and helped to turn Worcester in New England's industrial center.

Between 1800 and 1810 the water power used in Worcester more than doubled and combined with the completion of major railroads allowed Worcester to overcome its previous isolation. Now it was up to mechanical entrepreneurs to set up the industrial economy that would make Worcester a key city of New England. Stephen Salisbury was one of these people and along with many others he began to build factories and set up spaces for manufacturers (Washburn 1917). He did this by buying or building a factory and renting it to a new manufacturer, which in turn allowed the mechanics to go into business easily and cheaply. Due

to the opening of new manufacturers risk taking became more common, increasing the number of small firms due to the little risk involved in getting started.

One person that took advantage of this ideal situation was Ichabod Washburn, who in 1831 founded a wire-making firm which eventually became the largest in the nation. Mr. Washburn became dominant in the wire industry by devising a new wire-drawing process that led to exponential increases in the output of his factory (Washburn 1917). Worcester benefited from Washburn's wire company, because of the amount of Worcester residents employed in this factory. Many of which were average blue collar worker. Stephen Salisbury built many factories over the years which housed a wide variety of industries. Another reason for Worcester's early success in the Industrial Revolution is the fact that, unlike other cities in the area, there were few corporations and if there were any, the stockholders were residents of the area (Worcester Historical Museum 2008).

Worcester would not have made it as a developing urban center if it was not for the increase in population that it experienced early in the nineteenth century which was caused by a number of events enhanced by the technology, one of them being the railroads. As the transportation network between Boston, Providence and Worcester developed more and more people moved into Worcester looking for the opportunities that it offered by the developing city. Because there were opportunities for both blue and white collared workers, a wide range of people from all sorts of backgrounds looked at Worcester as a place where they could succeed.

In 1810 Worcester had a population of 2,509 people. By 1830 there were 4,082 people living in Worcester, with the biggest increase coming from people between the ages of 16 and 45. Worcester experienced a steady growth in population every year between 1800 and 1836, with a 13 percent increase in one year from 1835 to 1836. There is also a steady increase in the number of buildings being built in the City during this period. In 1801 there were 662 buildings

built and 278 of them were houses. By 1831 there were 1466 buildings built and 521 of them were houses (Lincoln 1862). This increase shows that in the first thirty years of the nineteenth century there was a steady increase of families and young adults moving to Worcester, which was developing accordingly.

Capital Invested, Materials Used, Wages Paid, Wage-Earners, and Product, Worcester, 1918.

Industries	Number of Establishments	Capital Invested	Value of Stock and Materials Used	Amount of Wages Paid during the Year	Average Yearly Earnings	Wage-Earners Employed — Average Number — Males	Females	Both Sexes	Smallest Number	Greatest Number	Value of Product
Worcester	523	158,539,008	122,768,576	46,131,933	1,081.59	33,102	9,550	42,652	35,231	49,943	234,294,197
Boots and Shoes	9	1,991,909	3,385,574	926,471	795.25	582	583	1,165	874	1,362	5,067,277
Bread & other bakery products	52	704,419	1,959,121	407,442	998.63	328	80	408	364	482	3,046,181
Carriages, wagons & materials	4	63,553	14,698	17,512	972.89	18	.....	18	10	23	47,268
Clothing, men's	13	602,217	621,581	349,802	963.64	158	205	363	238	564	1,189,654
Clothing, women's	18	909,625	1,215,445	348,372	721.27	81	402	483	326	607	1,939,142
Confectionery and ice cream	12	119,131	288,550	41,022	1,281.94	28	4	32	27	45	404,527
Copper, tin, sheet-iron products	11	745,695	427,560	289,829	937.96	272	37	309	232	415	1,054,039
Cotton goods	4	1,122,769	2,165,410	145,276	875.16	57	109	166	121	189	2,661,207
Cutlery & tools, not elsewhere specified	20	3,122,224	1,795,284	1,423,057	1,066.76	1,136	198	1,334	1,136	1,515	5,038,090
Electroplating	6	54,504	31,378	45,361	986.11	43	3	46	29	69	104,933
Foundry & machine-shop products	106	52,222,217	35,489,495	19,153,195	1,277.82	14,112	877	14,989	12,263	17,691	73,592,366
Lumber, planing-mill products	7	366,270	293,477	168,971	993.95	170	.....	170	135	211	550,493
Mineral & soda waters	6	85,650	80,281	49,025	1,167.26	42	.....	42	24	69	169,667
Models & patterns, not including paper patterns	4	35,627	31,739	65,398	1,307.96	49	1	50	35	66	125,096
Sausage, not made in slaughtering & meat-packing establishments	4	145,062	510,173	43,104	1,197.33	36	.....	36	34	36	667,517
Tobacco manufactures	12	62,034	68,671	40,609	766.21	40	13	53	49	63	145,134
Wirework, including wire rope & cable	8	3,422,286	2,386,599	1,053,582	825.04	963	314	1,277	1,122	1,456	4,432,841
Woolen & worsted goods	14	6,057,550	7,007,994	1,550,226	855.06	900	913	1,813	1,487	1,996	12,015,168
Other industries	213	86,706,266	64,995,546	20,013,679	1,005.81	14,087	5,811	19,898	16,725	23,084	122,043,597

Figure 15: Worcester Industrial Data
Source: Worcester Review Bulletin 1918

Worcester's industrial economic base peaked in the early twentieth century. The value of goods manufactured in the city rose 161.2% between 1913 and 1918. The large number of wage earners and amount paid in wages caused it to be ranked second in industrial importance in the State (Worcester Review Bulettin 1920). This growth was tightly linked with the demand for manufactured goods created during the First World War. The city's diverse industrial base, which ranged from foundries and machine shops to textiles and candy, enabled it to support such rapid growth when faced with the sudden jump in demand. It is no surprise that a city so rich with work was planning a bold monument to its veterans in the form of a civic performance facility.

The years immediately following the year of dedication of the Memorial Auditorium were hard times for the City of Worcester. The Great Depression had a pronounced effect on the city, with many jobs being lost as major manufacturing operations were closed. These times were not to last. America's entry into World War Two marked the start of a booming economy of any city through the country. Many of the products manufactured in New England were vital to the war effort. The demand for jobs increased with the institution of the draft, as many of the city's young men were called upon to defend their country. Due to that majority of the young men went to war; the working population was then formed by a much older group of citizens, as well as more women entered the workforce. More money was in the hands of Worcester citizens, who needed entertainment. It is not surprising that the Auditorium was being utilized to its full potential during this time.

Such good fortune would sadly not follow Worcester into the second half of the century. In the late 1940s employment numbers began to fall. Eight thousand manufacturing jobs were lost from 1947 to 1957. The loss of large companies such as Bell, Wickwire-Spencer, Cornell-Dubilier, Heywood Shoe, and Hathaway bakers left voids in the job market. At the same time,

the city was failing to attract new industrial ventures that would be an ideal fit with the large blue collar labor force available (Cunningham 1957). Additionally, the City was experiencing a population shift from the city to the suburbs. The population of the city proper peaked in 1950, at 203,486. It then began a steady decline, all the way down to 180,000 by 1970. At the same time, the surrounding towns began to notice changes in population as well. From 1950 to 1955 West Boylston, Auburn, and Paxton saw population increases of 61%, 40%, and 47%, respectively (Anonymous 1959).

During the early 1950s Worcester publicly celebrated its public works achievements, unaware of an impending tax crisis. Local economic problems mounted as the decade progressed. The economy of Worcester gradually recovered during the decade of the 1950s from the recession of 1947 – 1949. The outbreak of the Korean conflict accelerated the recovery process, and manufacturing employment reached 55,000 by mid 1951. Following the end of hostilities in Korea, manufacturing employment dropped substantially from 53,000 in September 1953 to 47,500 by September 1954. Job openings were slightly in excess of job seekers in mid 1956, but employment turned down at the end of the year. In 1960, there are substantial layoffs in metal working, stone clay glass, and textiles. However, the employment held relatively stable.

The end of the war brought changes to the city. Automobiles became the standard form of transportation, and the city found its existing street network was not capable of handling the traffic. The trolley system that had run down city streets and right through Lincoln Square had to be completely removed to make way for cars. In 1955 the train station and tracks in the square were also demolished. The loss of taxable property as a result of large scale public works projects such as the Lincoln Square reconstruction and the West Side Artery began to take chunks out of the city's annual income. Those two sites alone were worth $1.2M in lost tax revenue during 1953-54. Off-street parking tax losses climbed from $333,000 in 1954 to

$400,000 in 1955. As a result, the tax assessors were forced to raise taxes. In just five years, 1950-55, the property tax rate jumped from $48.70 to $56, a 15% increase. This was a 97% increase from the 1930 rate. Simultaneously, the total value of assessed property was $7M lower than it had been in the 30s (Rayer 1961).

The city also took a big hit from a quick decline of business in areas such as in the downtown shopping center. Improvement in travel conditions and the construction of new off-street parking areas seemed to arrive too little, too late. Many experts believe that the slump was caused by ruthless competition amongst shopping centers such as Lincoln Plaza, Webster Square Plaza and others. The Central Business District of the city proved unable to offer the level of comfort and convenience that these other shopping centers provided to customers. Despite deliberate efforts to renew the area, store after store went out of business or moved during the late 1950s. The economic difficulty in the Worcester downtown area was obvious amongst local businesses. Although the numbers of stores in shopping centers increased, the total number of retail establishments in the city proper dropped 13% between 1950 and 1960, from 1500 to 1335. During the same period of time the number of people employed by retail businesses dropped from 14, 664 to 12,129, causing the total annual payroll from retail businesses to drop as well, from $42,890,000 to $39,564,000. Figure 16 shows the drastic change in employment. The Worcester area employment reached 125 thousands in June 1957 but by March 1959, it went down to approximately 112 thousands. To make the situation worse the number of manufacturing industries was once again in decline as well. During the same period of time it dropped from 607 to 567 businesses, and the number of industrial employees went from 46,365 to 38,163. Such losses in retail business and industry caused a poor economic situation for the city (Worcester Telegram 1971). The combination of the declining in manufacturing sector, employment, income, population, as well as the worsening tax situation was to blame. These

factors were all contributing towards the slow decline of economy and business that has brought Worcester to its present low median income situation.

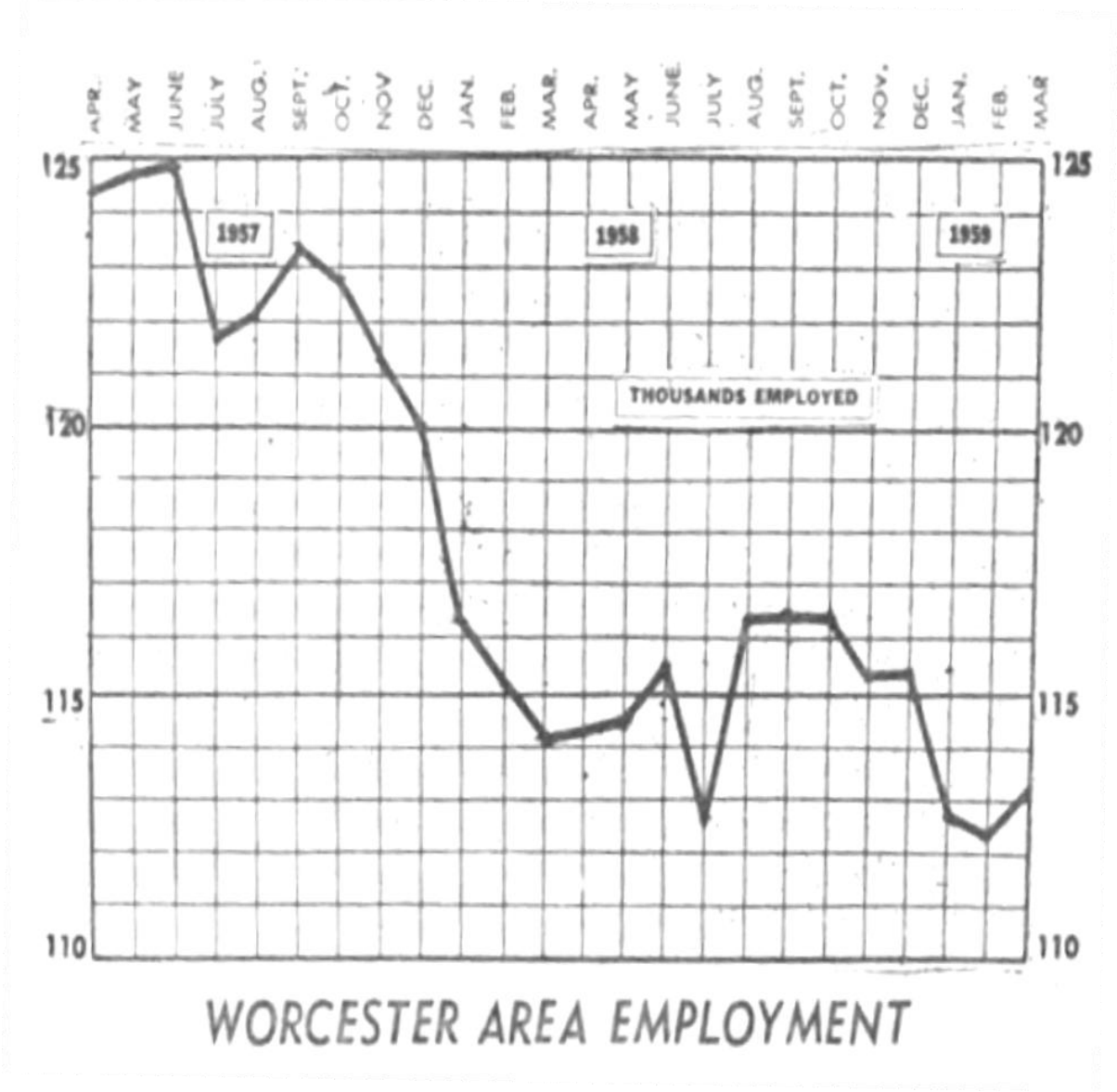


Figure 16: Worcester Are Employment 1957 - 1959

Source: Worcester Sunday Telegram 1959

The downward employment trend continued through 1959 with the loss of approximately seven thousand more jobs (Worcester Sunday Telegram 1959). A comprehensive economic study of the greater Worcester area was conducted in 1959 by the Arthur D. Little Corp. of Cambridge, the largest independent research firm in the nation at the time. During the course of

the study it became clear that the industrial pattern of the city was showing definite signs of change (Botty 1959). Advances in manufacturing automation technology were reducing labor requirements and increasing capacity, leading to a nationwide decline in manufacturing employment opportunities. Worcester's dependence on these manufacturing industries caused it to be particularly afflicted by such national trends.

In 1959, Worcester was an industrial and commercial center with 4,397 firms reported to the Massachusetts Division of Employment Security. Among 71,291 people that these firms employed, there were 37,600 working for manufacturing firms. In the 1960 Census, the Worcester Standard Metropolitan Statistical Area reported a population of 323,306. The median income for families in 1959 was $6,058 compared with $5,660 for the U.S. and $6,272 for Massachusetts. Approximately 45 percent of area's non agricultural workers were employed in manufacturing in 1960. The leading employments were non-electrical machinery, primary and fabricated metals, and abrasive products. Table 8 shows further details about the Worcester Labor Force in 1960 (Worcester Telegram Gazette 1960).

Table 8 shows that the leading industries account for more than a quarter of non agricultural employment in the area. Those industries comprised the major durable manufacturing industries in the city such as wood, steel, construction and plastic. While textile, apparel, and leather made up the major non-durable class with approximately 10,000 people. During this phase, employment in the Worcester area had followed the national trends of shifting from "blue collar" to "white collar" jobs. The percentage of production workers went down from 81 percent of all employees in manufacturing in 1947 to 76.8 percent in 1954, and to 72.1 percent in 1958. "Between 1950 and 1960, the proportion of professional and managerial, clerical, sales, and service workers all increased while number of craftsmen, foremen, operatives,

kindred workers, and laborers declined, both relatively and absolutely." (Miernyk & Herrnstadt 1965)

Table 8: Worcester Labor Force in 1960

	Number	Percent of Labor force
Civilian Labor Force	**128,975**	**100.0**
Total employed	**123,831**	**96.0**
Total unemployed	**5,144**	**4.0**
Agriculture	**1,345**	**1.0**
Manufacturing	**51,156**	**39.7**
Furniture, lumber, and wood products	627	0.5
Metal Industries	12,556	9.7
Machinery	12,238	9.5
Transportation Equipment	520	0.4
Other durable goods	6,329	4.9
Food and Kindred	2,289	1.8
Textile and apparel	6,265	4.9
Printing, Publishing, and allied industry	2,330	1.8
Other non-durable	8,002	6.2
Nonmanufacturing	**71,330**	**55.3**
Mining	41	N/A
Transportation, communication, and public utilities	6,487	5.0
Construction	5,160	4.0
Wholesale trade	4,273	3.3
Retail trade	17,082	13.2
Finance, insurance, and real estate	5,558	4.3
Hospitals	5,729	4.4
Education services	6,362	4.9
Public administration	3,897	3.1
Business and repair services	2,121	1.6
Private household	1,979	1.5
Other personal services	2,889	2.2
Other professional and related services	5,391	4.2
Other occupations not reported	4,271	3.3

Source: U.S. Bureau of the Census, U.S. Census of Population and Housing: 1960 Census Tracts, p.450

Table 9 shows the increase in total employment of Worcester from 1961 to 1969 but from 1969 to 1971, the trend was reversed. The total employment decreased by 4,600 jobs in 2 years 1970 to 1971 because the drop in employment in the manufacturing sector. The employment in

manufacturing sector reached its peak in 1966 with 51 thousand people but 5 years later, it lost 10,800 jobs down to the total of 40,400. The decline in manufacturing can be explained by the cutback in defense spending by the government together with the overall recessionary economy. The durable goods sector, in general, dipped off in 1963 but gradually rose from 1964 to 1967 and started sliding down again to 26.9 thousand people. Fabricated Metals was the only industry in the durable goods sector that gained employment over the 10 years period. However, this industry also declined in 1967 from its high of 7,000 workers to 6,500 in 1971. The tremendous amount of layoffs within the durable sector, led to a big decline in the employment rate for the durable goods industry. "The closing of U.S. Steel Corporation's wire mill displaced approximately 200 people." (Gilliland 1973) An extra 700 workers lost jobs in the primary metals industry from 1970 to 1971 and the nonelectrical machinery industry lost 1,400 jobs in 1971. One other example was "Leland-Gifford Company, a tool maker in Worcester area since 1904, shut down its plant affecting approximately 100 people." (Gilliland 1973) In addition, the drop in other "durables" was caused by the large layoffs of Harrington and Richardson. The company's contract, which was to produce M16 riffles for the Army, was terminated in 1971 affecting the jobs of 1,000 employees. The nondurable goods sector followed the same pattern as the durable goods sector. It also experienced a huge drop in employment in 1963. (Gilliland 1973)

However, nondurable producers managed to slowly recover leading the industry to reach its peak in 1966. From 1966, the nondurable goods sector rapidly declined from 16.8 thousand workers to 13.5 thousands in 1971. The two most important products in this industry were textile and leather. These products in New England were unable to compete with foreign imports therefore as the result of that, the employment was reduced. In 1971, the leather industry lost 400 jobs due to the closing of three of the biggest shoe factories, The Frank H. Pfeiffer Company,

Inc, American Athletic Shoe, and the Kleven Shoe Company. The “other nondurable” industry such as paper, food, fuel, apparel retail, and farm products also experienced a drop in employment in 1971. On the other hand, the nonmanufacturing sector such as financial, medical, insurance, and banking services continued to expand by increases 700, 500, and 400 in services, wholesale and retail trade, and government respectively. (Gilliland 1973)

Table 9: Worcester employment 1961-1971 (Thousands)

Item	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Employment - Total	129.2	131.5	128.1	130.2	133.9	138.8	140.3	140.9	143.1	142.2	138.3
Manufacturing – Total	50.7	51.5	47.5	47.6	49.2	51.2	50.6	48.7	48.5	45.5	40.4
Durable Goods	33.1	33.9	31.0	31.1	32.6	34.4	34.5	33.3	33.6	31.2	26.9
Primary Metals	7.3	7.2	6.4	6.3	6.5	6.7	6.9	6.4	6.4	6.1	5.2
Fabricated Metals	5.2	5.5	5.7	5.8	6.2	6.7	7.0	6.8	6.8	6.6	6.5
Machinery	12.3	12.1	11.7	11.8	12.7	12.6	11.3	10.0	9.8	8.9	7.5
Other Durable	8.3	9.1	7.3	7.2	7.2	8.4	9.3	10.1	10.6	9.6	7.7
Nondurable Goods	17.6	17.6	16.5	16.5	16.6	16.8	16.1	15.4	14.9	14.3	13.5
Textiles	2.8	2.8	2.7	2.7	2.4	2.4	2.3	2.2	1.9	1.7	1.7
Leather & Leather Products	3.4	3.3	2.7	2.5	2.7	2.8	2.4	2.3	2.2	1.9	1.5
Other Nondurable	11.4	11.5	11.1	11.3	11.5	11.6	11.4	10.9	10.8	10.7	10.3
Nonmanufacturing – Total	64.0	65.8	67.1	69.1	71.4	74.9	77.5	80.2	82.9	85.2	86.5
Construction	4.3	4.2	4.2	4.6	4.6	4.8	5.0	5.2	5.7	5.8	5.5
Trans., Com., and Utilities	4.3	4.3	4.3	4.7	5.8	5.9	6.1	6.4	6.9	7.0	7.0
Wholesale and Retail Trade	20.9	21.5	21.7	22.1	22.5	23.3	24.4	25.3	25.6	26.4	26.9
Fin., Ins., & Real Estate	5.3	5.4	5.6	5.8	5.9	6.1	6.2	6.4	6.8	7.0	7.0
Service, Misc. Mining	15.4	16.4	17.0	17.7	18.2	19.4	20.1	21.2	22.0	22.6	23.3
Government	13.8	14.0	14.3	14.2	14.4	15.4	15.7	15.7	15.9	16.4	16.8
All other nonagricultural	13.0	12.8	12.1	12.1	11.9	11.3	10.8	10.6	10.4	10.2	10.0
Agriculture	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.4

Source: Annual Manpower Planning Report 1973

Worcester County and the New England region experienced decline in their base of employment over the 1965 -80 period. Over this period, the Worcester County and New England region still remained a manufacturing based economy. Table 10 shows the overall decline of manufacturing employment in Worcester County, slow growth of employment in manufacturing in new England; and also the change in the service branch of the economy both at the regional and county levels appeared to be very close to the change in service employment at the national level.

Table 10: Employment change 1965 -1979: The United States, New England and Worcester County

	1965	1979	% Change (1965-79)
Total Employment			
United States	47,743,277	74,681,368	+56%
New England	3,218,138	4,396,692	+40%
Worcester County	184,717	232,083	+26%
Manufacturing Employment			
United States	17,595,093	21,483,353	+22%
New England	1,428,110	1,549,997	+9%
Worcester County	99,391	95,416	-4%
Service Employment			
United States	7,709,154	16,774,161	+118%
New England	536,994	1,130,015	+110%
Worcester County	23,476	52,128	+122%

Source: Clark University 1988

Table 10 also shows that while manufacturing employment in Worcester County declined by 4% over the period, overall employment of the County increased by 25%. Even though decline both absolutely and relatively, the manufacturing sector of the economy still remained the biggest sector of employment in 1979. It accounted for approximately 41% of all the reported jobs. Also, the percentage change in employment of Worcester County, New England, and the

United States table 11 shows the decline in employment of the manufacturing sector and mining sector.

Table 11: Percentage Change in Employment 1965 – 79: Worcester County, New England and the United States (Major Industrial Divisions)

Divisions	% Change in Employment, 1965 – 79		
	Worcester County	**New England**	**United States**
Fisheries	+28%	+38%	+85%
Mining	-45%	+13%	+58%
Contract Construction	+39%	+26%	+63%
Manufacturing	-4%	+9%	+22%
Transportation and other Public Utilities	+12%	+27%	+43%
Wholesale Trade	+91%	+30%	+51%
Retail Trade	+40%	+37%	+69%
Finance, Insurance, and Real Estate	+15%	+38%	+72%
Services	+122%	+110%	+118%
Total	+26%	+40%	+56%

Source: Clark University 1988

The loss of jobs among nondurables in Worcester County was responsible for the 4% overall decline of employment registered by the manufacturing sector between 1965 and 1979. These nondurables industries include textiles, apparel products, and leather goods, employment declined at a rate of 30% or greater. In addition, the employment in printing and publishing, and paper and allied products sectors also decreased in the county. While the nondurable industries contributed to the decline of manufacturing in Worcester County over this period, the durable goods registered a 6% growth in employment during the same period.

Despite the decline of manufacturing sector, Worcester County was still a "microcosm" of the state. It had 10% of the state's employees, nearly 10% of annual payroll and approximately 10% of the business establishments in 1981 (Luke et al. 1983). The most

significant industry was manufacturing based on an employment and payroll perspective. The percentage of employees that work in the manufacturing sectors in Worcester County was greater than that in the state. Worcester county manufacturers producing textiles; furniture and fixtures; rubber and plastics; stone, clay and glassware; primary and fabricated metals; non-electrical machinery; and instruments employed proportionately more workers than their counterpart industries across the state. (Luke et al. 1983)

Table 12: Worcester County Business Patterns Summary1981

Industry Classification	# of Employees	% of Employees	Annual Payroll in $1,000	% of Payroll
Agricultural	374	0.16%	4,614	0.14%
Mining	60	0.03%	1,168	0.04%
Contract Construction	8,719	3.70%	160,780	5.03%
Manufacturing	92,987	39.55%	1,573,632	49.23%
Transportation & Public Utilities	8,418	3.58%	147,800	4.62%
Wholesale Trade	14,621	6.22%	256,724	8.03%
Retail Trade	42,651	18.14%	320,799	10.03%
Finance, Insurance & Real Estate	12,508	5.32%	189,876	5.94%
Services	53,626	22.80%	528,952	16.55%
Non Classifiable	1,157	0.49%	11,795	0.37%
Total	235,121	100%	3,196,141	100%

Source: The social service – Planning Corporation 1981

The Worcester County was more economically reliant on its manufacturing base and it was less dependent on the service sector than it was the whole state of Massachusetts. The blue collar work force is more predominant in the county. However, by 1981 the manufacturing was no longer the biggest employer. Many people were also employed by the service and retail trade industries. The health Industry provided the largest number of establishments with 450 physicians and 265 dental offices. The second largest employer was the nonelectric machinery manufacturing industry. Producers of metal working, office, and industrial machinery were the

predominant employers. Eating and drinking places was the third largest county employer with 10,729 employees (yellow report). The detail information of these industries is shown in table 13

Table 13: Worcester County Industries Employing 6000 or more Employees in 1981

Industry group	% All County Employees	Number of Employees	Class of Industry
Health services	9.38	22,064	Services
non electric machinery	8.00	18,764	Manufacturing
Eating & Drinking	5.25	12,334	Retail Trade
Fabricated Metal Prod.	5.14	12,076	Manufacturing
Rubber & Plastic Prod.	3.61	8,594	Manufacturing
Instrument & Related Prod.	3.45	8,119	Manufacturing
Food Stores	3.26	7,671	Retail Trade
Education Services	2.90	6,752	Services
Stone, Clay, Glass Prod.	2.82	6,635	Manufacturing
Durable Goods	2.90	6,578	Wholesale Trade
Misc. Retail	2.75	6,457	Retail Trade
Non-Durable Goods	2.50	5,865	Wholesale Trade
Total	51.86	121,909	

Source: The social service – Planning Corporation 1981

In the next 10 years, the employment of manufacturing sector in Worcester Area declined drastically. However, during the period from 1980-1985 employment was relatively steady within the manufacturing sector. It was approximately 50 thousand workers. Nevertheless, the period from 1985 – 1992 experienced a tremendous declined in manufacturing jobs. It went from 49.6 thousands workers to 36 thousands. During this period, the national and statewide in economy was shifting from a goods producing economy to a service producing economy. The numbers of jobs in the services sector in Worcester area continued to quickly increase and passed manufacturing industry by the end of 1985.

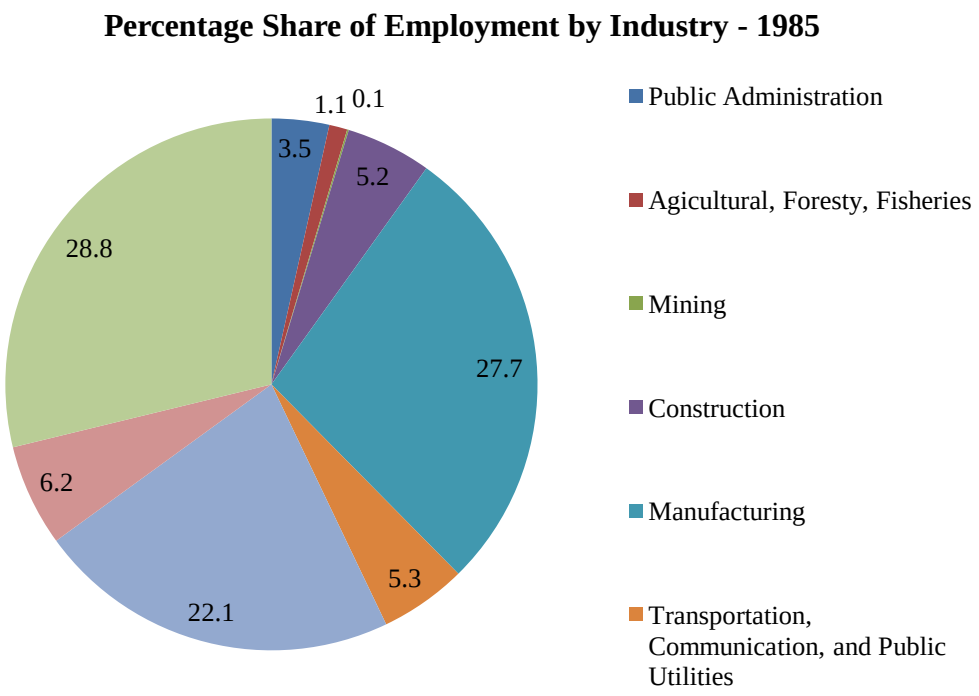


Figure 17: Percentage Share of Employment By Industry 1985

Source: Employment Requirement for the Worcester Labor Market Area by occupation 1970 - 1985

As shown in Figure 17, the service industry in Worcester Area comprised the largest share of employment in 1985 followed by the manufacturing sector. This was the first time that the services industry had a larger number of jobs over the manufacturing industry. The movement to the top by the service industries reflected the continuing change of the economy, not only within the state of Massachusetts but in the country as a whole. Table 14 shows detailed information about the nonagricultural wage/salary employment of Worcester MA.

Table 14 shows the shifting in employment from manufacturing industries to service industries over period 1980- 1992. In 1980, the manufacturing industry was still in the lead with 50.2 thousand workers but it went down to third place (behind Services, Wholesale & Retail Trade) since 1988. Along with service industries, the wholesale and retail trade industry became the second largest employment of the Worcester MA with 42.6 thousands employees at the end

of 1992. The manufacturing industry was in third place with 36 thousands workers. This period from 1980 to 1992 experience the shifting of Worcester from a goods manufacturing economy to a service producing economy corresponding to national and statewide trend.

Table 14: Worcester MA. Nonagricultural Wage and Salary Employment 1980 – 1992

Industry	1980	1982	1984	1986	1988	1990	1992
Nonagricultural Employment	172.8	172.4	183.5	196.8	210.2	198.2	184
Manufacturing	50.2	49	50.4	47.5	44.5	40.2	36
Durable Goods	32.3	33	33.9	32.1	29.4	26.7	23.4
Nondurable Goods	17.9	16	16.5	15.4	15.1	13.5	12.6
Mining	NA	0.1	0.1	0.1	0.2	0.2	0.2
Construction	5.7	4.9	6.2	8.5	10.3	6.8	5.2
Transportation and public Utilities	6.8	7.5	7.7	8.2	9.6	9.3	8.8
Wholesale & Retail Trade	37.1	36.2	40.9	46.7	49.6	47.1	42.6
Finance, Insurance and Real Estate	9.7	10.3	10.8	12.6	14.4	13.8	13.8
Services	35.5	37.5	41.3	46.2	52.3	51	49.8
Government	27.9	26.9	25.9	27.1	29.5	29.9	27.7

Source: Employment trends Worcester MA 1980 to 1992

The next 5 year period from 1995 to 2000 experienced the same trend as the period from 1980-1992. The services industries kept expanding with 42,893 employees by 2000 in Worcester City, increasing by approximately 7 thousands from 1995. The number of jobs in the service industries was 4 times greater than that in the manufacturing sector.

Worcester County Economics Trends 1993-2007

- **The 1993-1999 Period**

The city of Worcester was quite successful in term of creating jobs through period from 1993-1999. The numbers of jobs located in the City as well as the ones held by Worcester residents are shown in table 15. The employment increased at a greater rate than other cities of comparable size since 1993. The constantly low unemployment rate which was less than 4% for over two years, and the number of available jobs suggest that there are not enough prospective employees in the city of Worcester to fill those open positions. The lack of acquiring enough potential employees represents a real threat to the city and region economic growth (Worcester Research Bureau, 2000 A series of data collected from a proposal to develop economic growth throughout the City suggested that, rather than putting efforts towards creating of new jobs, Worcester should focus more on improving the quality of jobs being created in coming years. In addition, the City should also focus on investing the proper amount of time and resources in order to ensure that the employers in Worcester and the surrounding region would be able to fill such of high-quality positions (Worcester Research Bureau, 2000).

Table 15: Job Creation in Worcester and other Comparably Sized City, 1993-1999

Number of Jobs Located in the City (in 000s)								1993-1999
	1993	1994	1995	1996	1997	1998	1999	% Change
Des Moines	244.3	252.8	261.9	267.5	270.9	279.1	284.1	16.29
WORCESTER	206.0	211.6	213.2	216.8	222.9	228.9	230.9	12.09
Chattanooga	209.5	214.4	217.1	219.8	219.6	221.1	228.6	9.12
Springfield	236.8	238.7	242.3	245.3	250.9	253.7	257.8	8.87
Providence	479.1	486.6	495.3	497.9	505.7	514.8	518.6	8.24
Dayton-Springfield	443.0	455.2	465.7	467.7	474.8	477.5	478.5	8.01
Bridgeport-Milford	175.7	178	178.9	179.8	184.3	186.3	187.1	6.49
Hartford	585.5	586.5	584.5	590.2	597.8	603.9	612.0	4.53

Source: Worcester Research Bureau, Proposal for Economic Development in Worcester 2000

Table 16: Number of Jobs Held by Residents

Number of Jobs Held by Residents (December) % Change

	1993	1994	1995	1996	1997	1998	1999	1993-1999
WORCESTER	72,098	72,671	72,422	72,916	75,480	77,072	76,920	6.69
Des Moines	113,905	114,691	115,334	117,371	116,052	117,603	120,523	5.81
Providence	63,787	62,141	62,069	63,642	64,541	64,406	67,318	5.54
Chattanooga	69,373	72,343	71,501	72,533	69,809	70,814	72,091	3.92
Dayton	70,755	71,586	72,116	72,028	72,657	71,692	73,433	3.78
Springfield	59,990	59,128	59,673	59,776	61,529	61,510	62,028	3.40
Bridgeport	57,414	55,704	57,112	56,462	57,324	57,851	58,341	1.61
Hartford	50,166	47,474	50,361	49,910	50,066	50,336	50,725	1.11

Source: Bureau of Labor Statistics
Prepared by: Worcester Municipal Research Bureau

Source: Worcester Research Bureau, Proposal for Economic Development in Worcester 2000

Table 16 shows that as many jobs were being created at a very impressive rate, the growths in the municipal tax base continued to decline ever since 1994 municipal tax has grown by 3.1%. "The values of residential and commercial components of the City's tax base have grown 1.1% and 8.6%, respectively." However, during this same period the total municipal tax statewide increased by 16.6% (Worcester Research Bureau, Proposal for Developing Economic Growth 2000).

Table 17: Worcester's Tax Base

Worcester's Tax Base, 1994-1999 (in $)

	1994	1995	1996	1997	1998	1999	% Change 1994-1999
Residential	3,782,764,451	3,735,033,581	3,558,694,296	3,594,289,675	3,738,099,065	3,822,618,640	1.1
% of total	72.4	71.6	70.9	70.8	71.1	70.9	
Commercial	1,443,324,505	1,478,645,300	1,461,798,400	1,480,245,800	1,520,837,900	1,566,927,700	8.6
% of total	27.6	28.4	29.1	29.2	28.9	29.1	
Total	5,226,088,956	5,213,678,881	5,020,492,696	5,074,535,475	5,258,936,965	5,389,546,340	3.1

Source: City Auditor's Comprehensive Annual Financial Report, June 30, 1999
Prepared by: Worcester Municipal Research Bureau

Source: Worcester Research Bureau, Proposal for Economic Development in Worcester 2000

In the same report that the Worcester Research Bureau showed that Worcester's property tax base lagged behind of several other cities of similar size. These cities were Fort Wayne, Chattanooga, Dayton, Des Moines, and Bridgeport. But Worcester also managed to increase growth more rapidly than Providence, Springfield, and Hartford, as well as other well known

competitors such as: Boston, Westborough, Marlborough and Leominster showed a faster growing rate.

Table 18: Total Assessed Value of Taxable Property 1994 - 1999

Total Assessed Value of Taxable Property (in $)

	1994	1995	1996	1997	1998	1999	% Change 1994-1999
Westborough	1,212,592,769	1,244,775,474	1,288,379,237	1,461,866,077	1,520,869,547	1,679,674,416	38.5
Boston	26,765,152,500	28,115,695,000	29,374,464,300	30,988,609,800	33,762,902,300	36,050,449,100	34.7
Fort Wayne	1,339,875,210	1,341,957,173	1,551,795,557	1,571,566,717	1,587,789,669	1,676,552,465	25.1
Marlborough	1,939,098,610	1,901,568,712	1,991,796,098	2,079,169,543	2,186,675,235	2,381,277,926	22.8
Chattanooga	2,171,396,746	2,198,869,948	2,224,070,683	2,295,859,675	2,259,989,692	2,604,110,025	19.9
Dayton	1,581,824,270	1,586,624,016	1,595,501,441	1,709,168,672	1,699,537,162	1,738,069,616	9.9
Des Moines	4,150,289,175	4,238,913,102	4,221,608,565	4,345,870,441	4,370,239,852	4,536,357,333	9.3
Bridgeport	2,277,403,103	2,287,638,477	2,327,768,854	2,366,391,682	2,401,232,146	2,420,308,000	6.3
Leominster	1,597,278,679	1,593,157,640	1,612,025,775	1,598,465,586	1,619,971,821	1,687,421,419	5.6
WORCESTER	5,226,088,956	5,213,678,881	5,020,492,696	5,074,535,475	5,258,936,965	5,389,546,340	3.1
Providence	6,193,522,899	6,229,080,090	6,216,921,875	6,269,915,986	6,346,996,400	6,346,334,100	2.5
Springfield	4,247,269,890	3,992,119,900	3,743,962,740	3,806,631,920	3,833,539,540	3,962,100,070	-6.7
Hartford	6,243,718,827	5,960,680,293	5,782,099,845	5,818,059,675	5,734,494,074	5,747,344,878	-7.9

Source: Comprehensive Annual Financial Reports, FY99, MA Department of Revenue,Division of Local Services, Rhode Island Public Expenditure Council
Prepared by: Worcester Municipal Research Bureau

Source: Worcester Research Bureau, Proposal for Economic Development in Worcester 2000

In 1994, examination of the expending on new residential and commercial constructions suggested that there was a significant decrease in investment of this kind (Table19)

Table 19: New Construction in Worcester, 1994-1999

New Construction in Worcester, 1994-1999 (in $)

	1994	1995	1996	1997	1998	1999	% Change 1994-1999
Residential	18,254,656	16,274,200	12,579,600	12,158,400	13,291,825	11,113,500	-39.1
Commercial	67,899,161	59,955,150	52,275,600	65,052,400	57,772,200	38,167,700	-43.8
Total	86,153,817	76,229,350	64,855,200	77,210,800	71,064,025	49,281,200	-42.8

Source: City Auditor's Comprehensive Annual Financial Report, June 30, 1999
Prepared by: Worcester Municipal Research Bureau

Source: Worcester Research Bureau, Proposal for Economic Development in Worcester 2000

Since 1994 the spending on new commercial and residential construction declined by 43.8% and 39.1% respectively. Due to the fact that the new construction spending statewide increase by 48.1% between Fiscal Year 1994 and Fiscal Year 1999, the decline of the construction spending throughout the city created worries and uncertainties (MA Department of

Revenue, Division of Local Services). Hence, the slow growing pace of new construction could be attributed to the fact that Worcester continues to struggle with a large number of contaminated sites. For instance, there are over 200 environmentally contaminated sites in Worcester while other cities throughout Massachusetts have managed to continue growing much faster even though they have encounter similar problems between 1994 and 1999 (Worcester Research Bureau, 2000). Therefore, the slow growing rate of new construction in Worcester contributed to the decline of its property tax base. As Worcester's property tax base decreased, the City headed into a series of short and long term problems which contributed to fewer firms' property tax revenue available for infrastructure investments, incentives for economic development, and other public funded programs. For instance, a strong municipal tax base helps the City to generate revenue, as well as meeting the City's financial obligations and allocating additional money for the "rainy day fund," which helps to improving the City's bond rating and lower the cost of debt services. Furthermore, it could help to lighten the burden on both residential and commercial property owners (Worcester Research Bureau, 2000).

As a result of a big decrease on the tax base and commercial construction spending, the Bureau recommended the Economic Development Team to focus their efforts on increasing the commercial tax base as well as improving the quality of jobs in the City instead of quantity. The Bureau offered solutions based on the review and studies of local economic policy, and the experiences of other cities which indicate that the role played by the municipal "even state" government could be very limited at the time of promoting economic development. This is because of the economic future of Worcester and the surrounding region largely depends on the decisions made by private business and investors. However, a well prepared plan from the Worcester economic Development Team could influence the decisions making process of companies and businesses. The team could provide the right information and services expected

by private businesses/investors at the time of selecting a site for their new or expanding enterprise. Four main recommendations emerged after examining the economic development practices of other communities. The proposal was created based on these recommendations. It later was modified to fit the City's situation at the time.

The proposal suggested the city to develop a Comprehensive Data Report which describes the local labor market. The Bureau felt that it was critical for the City to have detailed information about how ready and available the Worcester labor force was. It also suggested that the labor market information could be used as an implement for targeting businesses as well as recruiting the best prospective employees. Therefore, the Worcester regional Research Bureau creates "Benchmarking Economic Development in Worcester" every year. The reports provide information about the economic development measures previously presented: Commercial & Residential Tax Base, Residential & Commercial Growth, Commercial Tax Rates, Private Investment, Employment and Labor Force Growth, and Abandoned and Distressed Properties. Based on this information, the city can make an effective plan for the next year.

- **The 2002-2003 Period**

During the year 2003 the total value of real state reached $7.6 billion. As illustrated in Figure 18, such significant change was an increase of $6.7 billion from 2002. Although the total value of property was steadily growing through the previous period (1993-1999), the dramatic changes transpired in FY 2002. However, Figure 19 shows that such growth was not evenly distributed between commercial/industrial and residential markets. For instance during the FY 2003 the total assessed value of commercial and industrial properties increased by only 2.3% from FY 2002 while the value of residential properties increased by 18.6%.

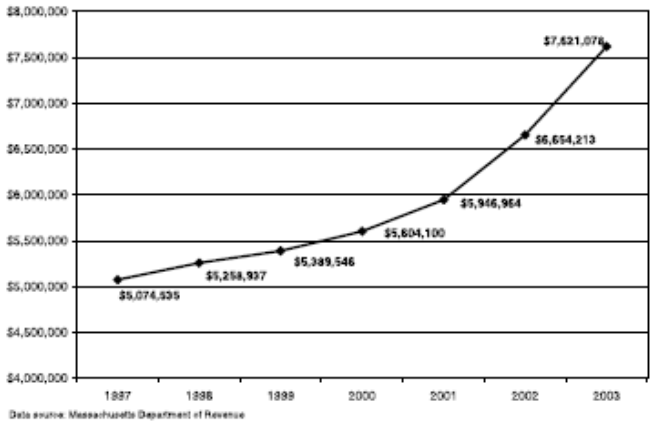


Figure 18: Total Assessed Value of all Properties in Worcester, FY97-FY03 (in thousands of dollars)
Source: Worcester Research Bureau, Benchmarking Economic Development in Worcester 2003

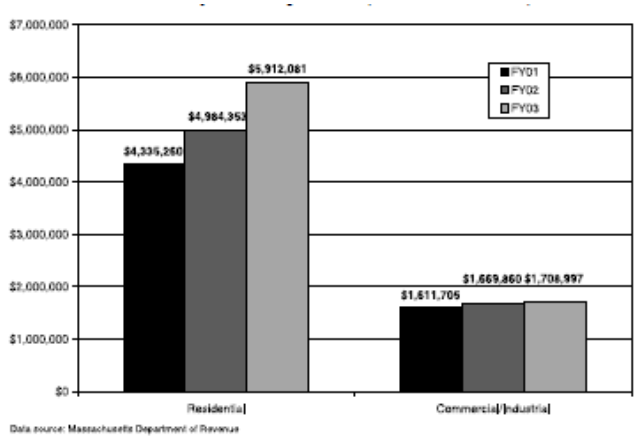


Figure 19: Growth in the Total Assessed Value of Properties by Class (in thousands of dollars)
Source: Worcester Research Bureau, Benchmarking Economic Development in Worcester 2003

As shown in Figure 20, Worcester continued to struggle with attracting new businesses into the county. In 2003, Worcester's residential tax base was 77.6% which was a record high coming from the residential proportion. However, the commercial tax base was only 22.4%. This represented a 13% downfall similar to the commercial tax rate decline in 1984. In 2003 Worcester was the number one city among mid-size cities in the northeast in terms of residential tax base; however it was outperformed by Lowell and Springfield in Commercial/Industrial tax base. In the same period, it went from first to third and fifth place at the end of the year.

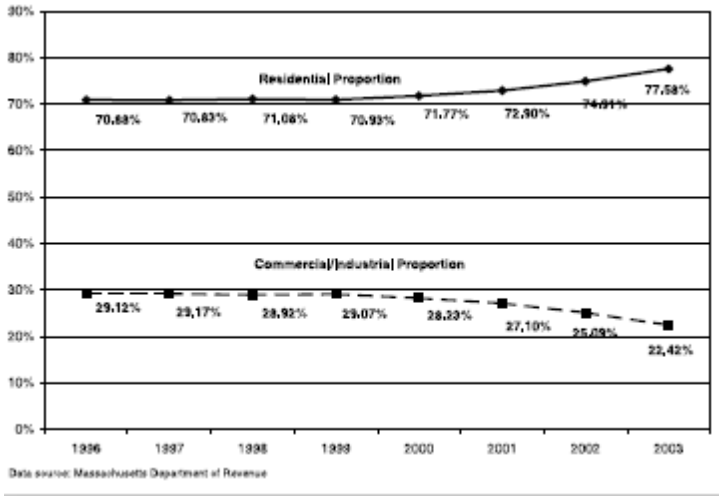


Figure 20: Trend in the Distribution of Property Values, FY96-FY03
Source: Worcester Research Bureau, Benchmarking Economic Development in Worcester 2003

Another important measure is the "Total Assessed Value of Properties," due to the fact that this generates revenues; it could be used to determine the quality of life in Worcester. As important as the value of property is, there are also businesses which create the commercial/industrial market of the city and jobs. Not only for the Worcester residents but also for many others who reside throughout the county. The increasing percentage in residential tax base during a period in which the commercial tax base was declining, proves that Worcester became an attractive place for living while not attractive enough for businesses (Figure 21). Figure 21 also shows that Worcester's tax base grew 14.5% between FY 2002-2003. The major part of this growth was due to the amount of new residential construction. New construction is seen by any city as a good economic indicator, because it provides improved housing, creates jobs, as well as increases the City tax base which makes it easier to finance municipal services.

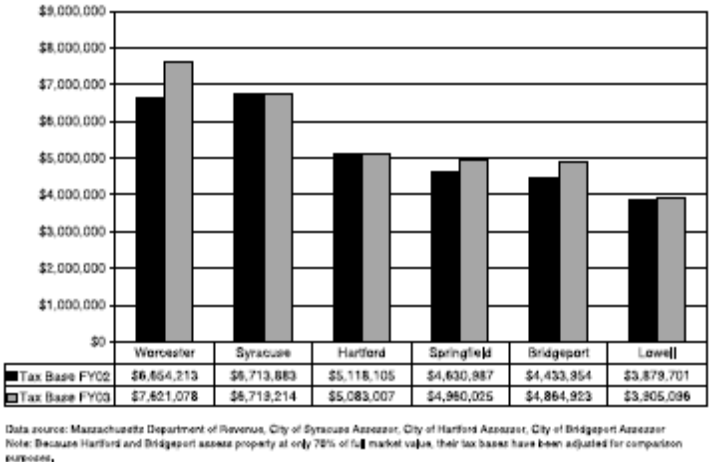


Figure 21: Comparison of the Total Assessed Value of Properties, Worcester and northeastern Cities (in thousands of dollars)
Source: Worcester Research Bureau, Benchmarking Economic Development in Worcester 2003

Figure 22 suggests that the total of new construction in the City in 2003 increased by 25.2% over the previous years. At the same time it shows a massive increase of 60.6% in the value of residential constructions just between 2002 and 2003. Although residential construction continued to show a strong growth, the commercial/industrial remained just about the same from FY 2002 to FY 2003 while decreasing by 0.02% in 2000-2001. As residential construction continued to grow enormously and the commercial/industrial sector continued to struggle, many believe that, "Worcester has become the bedroom community for Metro-Boston commuters." (Worcester Research Bureau, Benchmarking Economic Development in Worcester 2003). Hence the revitalization of the Worcester Regional Airport was suggested as a good way for stimulating not only the economy of Worcester, but also the whole Central region. It has been proved that airports are stimulants of economic development. For example, Manchester Airport in New Hampshire was renovated at a cost of $500 million, and the expectation is that it would generate revenue of over $1 billion per year, starting 2010.

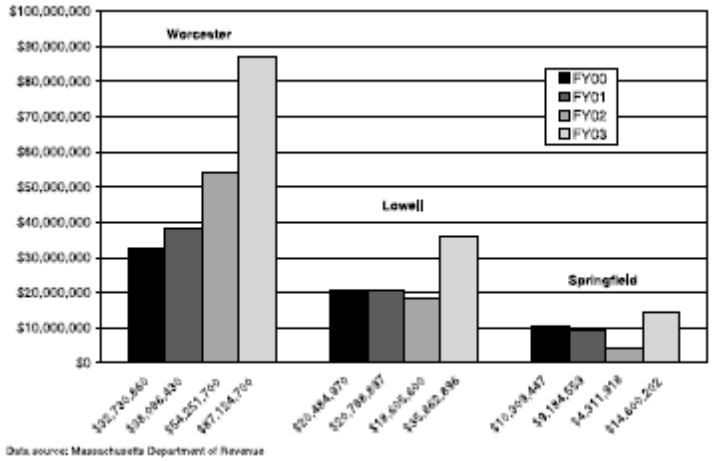


Figure 22: Value of new Residential Construction in Comparable Massachusetts Cities, FY00-FY03
Source: Worcester Research Bureau, Benchmarking Economic Development in Worcester 2003

Although all of these potential projects may seem appropriate. It is very important to keep in mind how important it is for any city to maintain a low unemployment rate, a skilled labor force, as well as an adequate number of jobs for the available work force. All of which are essential factors in order to sustain a positive economy growth. A city without any of these it is expected to struggle maintaining a healthy economy. It is going to be very difficult for Worcester to maintain its economic prosperity without bringing new businesses and development projects. Since the year 2000 the number of jobs in Worcester started to decline, and by 2002 Worcester had 98,571 employees. As suggested in the next figure this was a 2.4% decrease from the previous year in the overall number of jobs throughout the city. It was the first time since 1998 that the number of jobs in Worcester was below 100,000.

One of the changes that impacted the City and the county the most was the 29.3% drop in the number of manufacturing jobs between 1999 and 2002. However, Worcester was not alone in losing manufacturing jobs. A massive number of jobs in the manufacturing sector were been lost throughout the whole nation during this period. However, while the manufacturing sector continued to decrease other sectors and industries gained ground throughout Worcester,

especially in the service sector (Worcester Research Bureau: Benchmarking Economic Development in Worcester 2003).

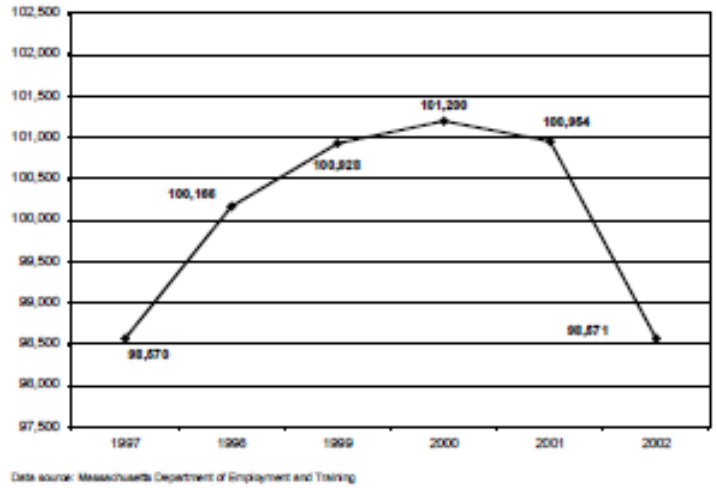


Figure 23: Number of Jobs in Worcester, 1997-2002
Source: Worcester Research Bureau: Benchmarking Economic Development in Worcester 2003

The following tables analyze the statistics concerning Worcester Metropolitan Statistical Area (MSA) and compare them with statistical data of other cities in the northeast. During this period Providence maintained the highest number of jobs within the region. Nevertheless, this is surprising, because since 2000 the census has shown that the population outnumbered that of Worcester which made Providence the second largest city in New England. During the year 2002 Worcester had 252,372 jobs. This represented an increase of 4.6% since 2001. Sadly just in the first seven months of the year 2003 Worcester's labor force decrease by 2.2% from 82,945 to 81,086. Among all comparable cities in the northeast, Syracuse had the largest percentage increase (4.1%) in labor force since 2001. Worcester had a very slight increase placing the city second to the second lowest, with only Lowell showing in actual decrease of less 0.1% in its labor force. Due to state and national trends Worcester's unemployment rate increased since 2001. However, as indicated above Worcester did have the lowest unemployment rate among the

comparison cities during the first seven months of 2003 at 7.2% compare to 5.9% (Figure 24 & Table 20) .

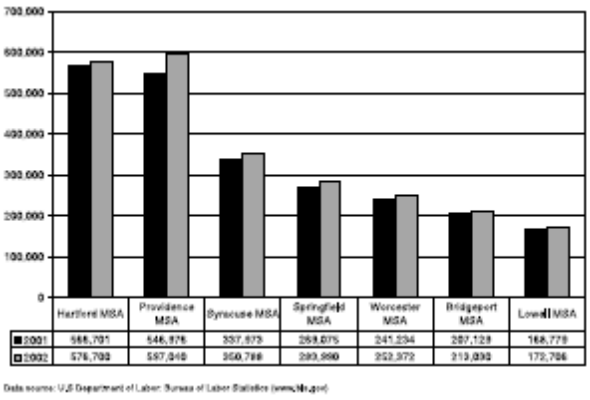


Figure 24: Number of Jobs in metro Areas, 2001-2002
Source: Worcester Research Bureau: Benchmarking Economic Development in Worcester 2003

Table 20: Labor Forces and Unemployment Rates for Northeastern Cities, 2001-2003

	Labor Force, 1st Seven Months, 2003	Labor Force Growth, 2001-2003	Unemployment Rate, 2003
Worcester	81,086	0.7%	7.2%
Providence	76,839	3.6%	7.3%
Syracuse	77,381	4.1%	7.6%
Springfield	68,092	3.9%	7.9%
Lowell	54,439	0.0%	8.5%
Bridgeport	63,777	3.5%	9.3%
Hartford	54,921	2.6%	10.3%

Data source: U.S Department of Labor, Bureau of Labor Statistics; www.bls.gov.

Source: Worcester Research Bureau: Benchmarking Economic Development in Worcester 2003

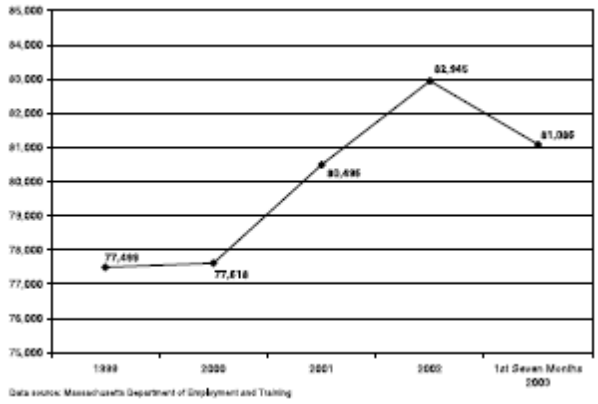


Figure 25: Growth in Worcester's Labor Force, 1999-2003
Source: Worcester Research Bureau: Benchmarking Economic Development in Worcester 2003

During the years 2003-2004 the Comprehensive Economic Development Strategy Committee (CEDS) for the city of Worcester, issued a comprehensive report addressing the opportunities and constrains of the City and its region. CEDS reported the vision for the Greater Worcester Area was to build on the region's economic strengths and to sustain the positive economic momentum during that time, and to help the region to stand against the inevitable economic downturns. The Worcester region was identify as strong in several economic resources, which included a skilled and educated workforce, intellectual capital available throughout 16 institutions of higher education, as well as a variety of federal/state and local development agencies, at the same time an excellent transportation network and a great fiber optic infrastructure network.

In 2004 the goals for the Greater Worcester Area were to implement a successful economic plan, while processing and utilizing all of its economics resources in order to maximize its economic potential. The plan was to enhance the exiting manufacturing base within the region by fostering the creation and expansion of start up and small business in the manufacturing, service, and retail sectors, and by providing a well-trained workforce with up-to-date skills (CEDS Committee 2004). The economy of the Worcester region remained fairly stable

throughout 2003, despite the struggling national economy and the deteriorating fiscal conditions of the Commonwealth of Massachusetts. Although, many regions throughout the country were severely impacted by global, national, and statewide conditions, the Worcester region could show positive economic indicators and growth in a range of business sectors. As several economic indicators seem to point to a national recovery, there is the reason to believe that the Worcester region already started to come back from the gradual yet intermittent revival period into a positive position (CEDS Committee 2004).

Although many of the forecasts are largely based on economic indicators, there remains no other better tool for measuring the success of a region than the actual numbers base on its progress. The implementation of projects such as Gateway Park, the North end of Main St, as well as the cleaning of many of the Brownfield that have been planning for several years have led to job creation as well as generating new tax revenues. Based on the most recent numbers, as well as recent benchmarks leading toward anticipated growth in the Worcester region, the forecast for the future of the Worcester region looked fine. (CEDS Committee 2004)
Based on a development analysis a series of projects (revitalization of the airport, renovation of the Hanover Theater, and the opening of new housing apartment complex) were proposed or underway in 2003 in order to stimulate private investment, create new jobs, as well as to generate more tax revenues. Clearly business development activity and the interest in the Worcester region continued strong, regardless of a struggling national economy. Between 2003 and 2004, over 100 companies and entrepreneurs contacted Worcester Regional Chamber of Commerce looking to repositioned, expand or establish new operations within the City. Independent studies showed, that companies and individuals looking for expanding in or transfer their operations to this region remained relatively strong and steady in 2003. Manufacturing and distribution space continued to be the greatest demand from businesses to the Worcester region. However, it was

not until a couple years later when many of these projects came to fruition, while many others never moved forward at all due to overall economic circumstances (CEDS Committee 2004). Therefore, the region should critically protect and enhance its human and physical infrastructure capability, because having a strong labor force and infrastructure are very important factors considered by investors at the time of looking for places to locate their businesses. Although the region seem to have the human infrastructure in place to create attraction from new companies toward the City, as well as maintaining the expansion of existing companies, identifying accessible sites that can provide accommodation to the demand for large amounts of space (large buildings) continued to be one of the region's greatest challenges. Therefore, in order for the Worcester region to do so, it should continue concentrating on cleaning and reviving Brownfield sites as well as making good decisions in regards of buildings and sites that as in right now are only representing expenses for the city (e.g. Worcester Memorial Auditorium). At the same time communities around the region have to address their poor support they give to their infrastructure and major development projects (CEDS Committee 2004).

Communities throughout the region have put much effort into developing this infrastructure; however, a huge amount of work remains to be completed, in order to provide better sites for future development. The city of Worcester stimulated a cleanup for Brownfield sites that administered a $1 million revolving loan funds. This loan was established in 2003 through the Environmental Protection Agency (EPA) as a grant for remediation of public and private Brownfield sites that needed to be cleanup (CEDS Committee 2004). However, it is important to understand that a $1 million for cleaning up fields and sites throughout the city was not enough then, and it will continue to be insufficient to present.

Even though, the Worcester region has access to 37,000 students, faculty and administrators at 16 colleges and universities, a highly-skilled and well educated workforce. An asset that should

help the region attracting and retaining emerging industries as well as traditional business sectors, it will be necessary for the city to have the right infrastructure in place. Furthermore, having such a great asset will also increase the number of technological, biomedical, pharmaceutical, and manufacturing companies which thrive in environments rich in institutions of higher education, comprehensive employment, and training networks.

In 2004 Worcester continued to complete projects or have them underway, this was seen as an indicative that more jobs were going to be created. These projects: Gateway Park (completed 2006), a 22 million Hilton Garden Inn in downtown (completed 2006), $75 million were set toward the renovation of Lincoln Plaza, and expansion of the Worcester Airport Industrial park among others (CEDS Committee 2004). However, the Worcester Memorial Auditorium was not among any of them, as it would not meet any city needs for economic growth (CEDS Committee 2004).

The Worcester region is likely to continue getting attention from companies seeking for a competitive location, excellent transportation network, trained and educated workforce, and an exceptional quality of life. There is no doubt that this region and the city of Worcester will recover from the current economic state to be in a positive position (CEDS Committee 2004)

7 Evolution of Entertainment technologies through the Life of the Auditorium

There were significant changes in the way Americans spent leisure time over the course of the twentieth century. Early in this century, rising wages and the gradual adoption of shorter workweeks, sick days, and paid vacations dramatically increased the amount of time and money available to the general public for leisure activities (Costa 135-138). Meanwhile, constant technological innovation during this era created a greater variety of recreation options for the general public. The combination of these factors gradually gave rise to entertainment enterprises, including mass media outlets and big business sports. This was accompanied by a marked decline in the importance of legitimate theaters, nonprofit entertainments, newspapers and magazines. By the end of the century, the focus of America's recreational spending had shifted from admission to spectator amusements and print media to computers, software, and commercial amusements. This is illustrated in Figure 26.

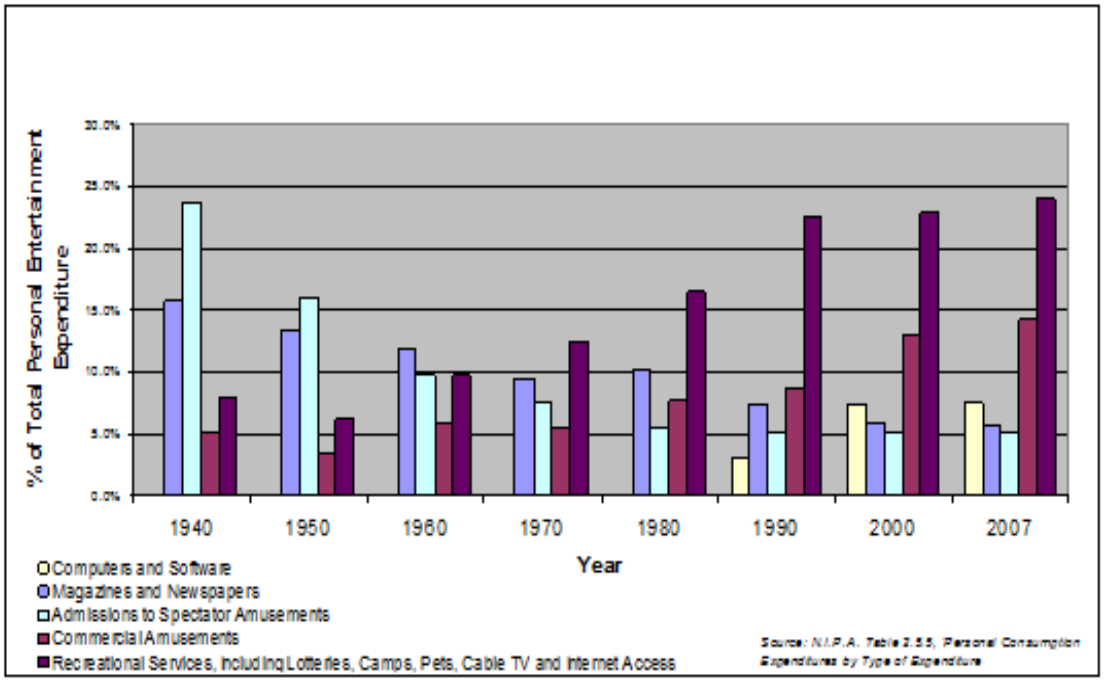


Figure 26: National Historical Distribution of Personal Entertainment Expenditures by Major Sectors

The public's shift in major types of recreational spending was also influenced by the gradual disappearance of the link between location and consumption of entertainment. Continual advances in entertainment throughout the century, especially broadcasting technology, diminished the importance of a customer's physical location when interested in many of the popular leisure activities. For example, at the turn of the century it was necessary to leave the home and go to a stadium to see a baseball game or purchase a newspaper to be informed of current events. The rapid acceptance of radio listening as a leisure activity changed all that. By 1939 80% of American households owned a radio set and were thus able to tune in from the comfort of their homes for a great variety of broadcasts, including sports, news, and comedy (Sutton 30). Continued commercial research and development into media broadcasting eventually led to the development of improvements such as portable radios and car radios, but, more importantly, the invention of television.

Television was quickly adopted by the public. A mere 5,000 television sets were in American homes in 1945. Remarkably, by 1951 this number had skyrocketed to 17 million (Goodwin 40). Quick to become the dominant form of mass media, television's appeal to Americans has stuck with us. The average daily viewing time per household has steadily increased for decades, from 4.72 hours per day in 1952 to 7.48 in 2007 (Ruddell 94). A consequential demand for programming fostered the development of various production studios and television networks. Additionally, the proliferation of television sets nationwide gave professional sports a chance to rebound from difficulties encountered during the war. It was now possible for anyone with a television in their home to be instantly transported to the excitement of the big game. This created a newfound demand for professional sports, which would become big business in America by 1970 (Gills 70).

At this point it was possible for Americans to experience a huge variety of entertainment without leaving their homes, constrained only by programming schedules. The advent of efficient distribution mediums for movies and music offered a new level in personal entertainment. Eight track cassette tapes and VCRs, which caught on in the 1960s and 70s, were the predecessors to the CDs and DVDs of today (Bradley 60). The 1980s marked the start of the personal electronics revolution, during which America was introduced to technological marvels such as cable television, portable digital media players, videogames, cellular telephones, personal computers and the internet.

This development of broadcasting technologies has fundamentally altered the preferred entertainment activities of American society. In 1940, the Memorial Auditorium was the only place where average Worcester residents could see sports, theater, concerts, ballet, and other live spectator events. Today, the average American citizen can consume a staggering variety of entertainment through their television or home computer. A typical weekend in either present day or 1940s Worcester may have involved watching the big game or going to a show, but the need for a local live venue such as the Auditorium has been eliminated by these mass media technologies. Major live events are now typically held in large, wealthy cities and beamed out instantly to the rest of the country. Cities such as Boston and New York have a much stronger economic base than present day Worcester, and thus these larger cities are better able to support these events. It is doubtful that the Memorial Auditorium would be able to lure big-budget live productions away from Boston.

Other technological developments throughout the last century have had an impact on recreation in America, and therefore had an impact on the future of the Auditorium. When the Auditorium opened, Lincoln Square was crisscrossed with trolley tracks that connected to all of

Worcester (Donker 23A). The trolleys were affordable, and much faster than horse or foot to get around the city. It was a simple matter for a family living anywhere in the city to get to an event at the Auditorium. These tracks were removed in 1955 to make way for the increasingly popular automobile. Unfortunately, the inadequacies of the street systems in Worcester quickly became apparent, and parking for Auditorium patrons has been a problem for the past half century (O'Connor 12). The rise of the automobile in personal transportation, and the accompanying decline in efficient local public transportation, has made it more difficult for locals to attend events at the Auditorium.

By the same token, the popularity of the automobile, in conjunction with the establishment of the interstate highway system in the 1950s, caused an increase in the mobility of local populations seeking leisure activities (Francois 4). A family in 1940s Worcester would need to seek out a local entertainment venue to see a spectator event, while a modern day family can easily travel by car to surrounding cities for live performances. The close proximity of Worcester to larger, wealthier cities such as Boston and Providence gives local residents who would be both capable of affording and interested in attending events at the Memorial Auditorium a variety of feasible alternative venues which, by virtue of the stronger economic bases in the host cities, have not experienced the Auditorium's fate.

8 Current debate concerning the use of the Auditorium

The Worcester War Memorial Auditorium has stagnated at the heart of Lincoln Square since 1998, when the city decided to terminate the facility's operation in lieu of absorbing continually mounting annual operating deficits. After a decade of use as office space and storage for the State Juvenile Court, the structure has been identified as a 'Priority Parcel' in the Division of Economic Development's recently published North Main Economic Development Strategy. It is one of eleven such parcels identified in the report as underutilized sites considered prime sites for infill development or adaptive reuse (NMEDS 5). Additionally, it is part of a trio of defunct buildings central to the North Main Area whose development would provide a catalyst for long term future development in the area. The importance of the Auditorium in the revitalization of Lincoln Square has been discussed for over twenty years. However no previous plans have come to fruition.

This can be attributed to the lack of a comprehensive development plan for the entire area. If the city were to commit to the North Main Economic Development Strategy the Auditorium may soon find a new life. It is marked for near-term phase development over the next five years, in hopes of providing the foundation for some longer term development plans. The historic significance of the war memorial is to be preserved through the renovation of Memorial Hall into a permanent memorial and museum space. Most of the remaining space will also be renovated for adaptive reuse, meaning it will be prepared for private, revenue gathering uses such as office or lab space. The renovations will be geared to attract one of the nearby academic institutions or Worcester's expanding biotech industry. Options for funding this large scale reconstruction were investigated; Historic Tax Credits have the potential to cover up to 40% of this cost.

Even though, the Worcester Memorial Auditorium has been vacant for over twenty years and the city has spent sufficient amount of money on the building, the city of Worcester is not looking for the total demolition option. The cost for demolishing the structure it is similar to what the renovation of the Auditorium would be. In addition to that, there will be political issues and emotional symbolic problems related to the Auditorium since there is a war memorial inside the building. The city of Worcester is trying their best to find the best solution in order to revitalize the building. They have created the North Main Economic Development Strategy (NMEDS) for Lincoln Square/North Main Street area. The city even hired an architecture firm to create the possible look the Auditorium. This study was performed by Lamoureux – Pagano Associates Architects. Figures 11, 12, 13, and 14 on this report were from the project "Worcester Auditorium Adaptive Re-use Study" by the above mentioned architectural firm. This study also revealed that the Higgins Armory Museum has shown interests in this building. The Museum is looking for more space to put on display all of the pieces of their extensive collection. However, this is still a controversial issue. No solution or proposal has been made. In the discussion with Dr. Jeffrey Forgeng, Paul S. Morgan (Curator at the Higgins Armory Museum and Adjunct Associate Professor of History at WPI) it was suggested that the Auditorium should become a cultural facility such as a cultural institution, or Worcester center for craft. An entertainment area that attracts traffic from offices in the area (e.g. a movie theater or a café) was one of the proposed ideas. At the same time, Dr. Jeffrey mentioned that because of the structure of the building, space for offices would not be a suitable option. Worcester's Executive Office of Economic and Neighborhood Development, with the assistance of a consultant team led by Vanasse Hangen Brustlin, Inc. (VHB) are working to find the best solution for the Worcester Auditorium. However in the actuality there isn't a solid idea of what to do with the building other than tearing it down.

9 Conclusion

Big expectations were created while the Worcester Memorial Auditorium was being planned and designed, it seen like a better city for such large could not have been chosen. Worcester was the city where everyone wanted to be, so much that even other cities fought over Worcester. However, that it is appropriate to remember that, the construction of the Worcester Auditorium was not an everyday project. The Auditorium project was put on hold by many different challenges and unique situations, and even though the first proposal for this building was submitted in 1912; this was not completed until 1933. In addition, the Worcester Auditorium had to overcome situations such as, World War I and a series of long and tedious debates.
Such debates all too often were not beneficial for the Auditorium project, because as they transpire the building continued to be on hold. Among the many things that put the construction of the Auditorium on hold there were those discussion in which the debate was over which site was the Auditorium going to be constructed.

Based on the economic data presented throughout this report, our belief is that the Worcester Memorial Auditorium was finished ignoring the economic depression that the United States was experiencing at the moment. In order for the Worcester Memorial Auditorium to be revitalized, a series of recommendations has been made. For instance there is an ongoing project that is focus on the North Main St Economic Redevelopment, Aimed at converting downtown into a fast pace 24 hour district with a young funky style. Part of the plan to bring such environment to downtown would involve relocating the Worcester Police Station and converting it into retail stores, office spaces, a research laboratory, and/or tearing it down and converting it into a hotel.

Although several years have passed since the last time the Worcester Memorial Auditorium was used, the debate is yet to make positive progress. Many people of the individual

involved have stated that do not mind the building being destroyed. Others think that the City should keep the building. However, actually one of the most feasible options for the Auditorium these days is to bring the Higgins Armory Museum to the Auditorium. But making such decision would be just a repetition of history, and as in early 1990s when the City scrambled to desperately find a tenant for the stately but sadly vacant Memorial Auditorium. The Higgins Armory Museum would not generate enough revenue to cover the expenses for the maintenance of such a large building, and once again they will be force to close it again.

Another reasonable option was offered by the Worcester Business Development Center (WBDC) which is to convert the building into business offices, and residential units. One of the leading factors for making this decision was the fact that, Worcester lost a big part of its credit ratings. Hence, if the city of Worcester was having difficulties to obtain credit then, it would be much harder obtained a better credit now due to the economic crisis the country it is going through. Another reason to come to this conclusion is the fact that the city of Worcester continues to economically struggle in comparison to Lowell, Providence, and Boston. Worcester has not been able innovate enough in a way that would attract new companies and businesses, and to create new jobs that contribute to prevent Worcester residents from making and spending their money somewhere else. Therefore, we recommend that Worcester should not only focus on trying to compete against Boston or other cities, or on renovating a building here and there. The city should either implement some tax cuts for businesses, or come out with some type of stimulus package for business owners that will motivate them to bring their business back to Worcester.

This would create more jobs and will also put more money in the pockets of Worcester residents. Furthermore, the city should put more efforts into researching new technological entertainment, that would keep the Worcester college community in the city and attract those

from other cities into the city of Worcester for dining and entertainment. On the other hand, Worcester does not have its own shopping center, which forces resident to go out of the city in search of malls. Hence the suggestion is that Worcester should implement an attractive plan for retail stores, and through them not only will create more jobs, but it will also generate tax revenues. Developing both projects all at once it will be a hard thing to do, because of the city's credit ratings and its low operational capital. However, there is the notion that will be once again devastating and a waste of money if the city intends to focus on just creating leisure places but the people does not generate the money to be able to enjoy them. Therefore, it is extremely important that the city of Worcester concentrate its efforts toward creating jobs as much as to creating entertainment for those people that are going to make their money here. In other words it is vital for the city of Worcester to create an environment attractive enough for businesses and attractive enough for people to want to come here to work and entertainment.

Technology evolved and continues evolving beyond unimaginable at the beginning of the 20th century. Therefore, the Auditorium was technology then but unfortunately it is not today. Today we live in the digital era, the times for the Internet, the IPod and downloading music, videos and being able to listen and watch them anywhere we go. The Auditorium may be useful for the Higgins Armory Museum, a hotel; perhaps for something no one is yet to think of. The reality is that the world, in which we live today, is not the one where concerts and plays are the most fascinating sources of entertainment.

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